

THE MONIST

SOCIAL AS A CATEGORY

THERE are at the present time a considerable number of persons who habitually employ the social as a principle of philosophic reflection and who assign it a force equal and even superior to that ascribed the physical, vital and mental. There are others, probably a greater number, who decline to take "social" seriously as a category of description and interpretation for purposes of philosophy, and who conceive any attempt so to take it as involving a confusion of anthropology and sociology with metaphysics. The most they would concede is that cultural material may throw light on the genesis and history of human beliefs about ultimate subject-matter. But it is asserted that it is but a case of the familiar genetic fallacy, the confusion of the history of belief with the nature of that believed, to assign to such an account a place anywhere except within the history of human culture. Such a situation solicits attention; and I desire to state as far as time permits what is the intent of those who attribute genuine philosophic import to the idea of the social.

A start may be conveniently made by noting that associated or conjoint behavior is a universal characteristic of all existences. Knowledge is in terms of related objects and unless it is supposed that relations are a subjective intrusion, or that, *a la* Hume, only *ideas* are associated, relation as the nerve of science correlates with association among things. This fact being noted, we observe that the qualities of associated things are displayed only in associa-

tion, since in interactions alone are potentialities released and actualized. Furthermore, the manifestation of potentialities varies with the manner and range of association. This statement is only a formal way of calling attention to the fact that we characterize an element, say hydrogen, not only, as the name implies, in terms of its water-forming potentiality but ultimately in terms of consequences effected in a whole range of modes of conjoint behavior.¹

These considerations being premised, attention fastens upon the fact that the more numerous and varied the forms of association into which anything enters, the better basis we have for describing and understanding it, for the more complex is an association the more fully are potentialities released for observation. Since things present themselves to us in such fashion that narrower and wider ranges, simpler and more complex ones, are readily distinguished, it would appear that metaphysical description and understanding is demarcated as that which has to do with the widest and fullest range of associated activity. And I remark that if the phrase "degrees of reality" can be given an empirically intelligible meaning, that meaning would seem to depend upon following out the line of thought thus suggested.² In short, there appears to be a fairly straight road to the conclusion that a just gauge of the adequacy of any philosophic account of things is found in the extent to which that account is based upon taking things in the widest and most complex scale of associations open to observation.

In making this statement I am not unaware that the

¹ In case there is objection to the use of the conceptions of potentiality and actualization, it may be pointed out that the same facts may be stated, though as it seems to me more awkwardly, by saying that things in different modes of association occasion different effects and that our knowledge of them is adequate in the degree in which it includes a broad range of effects due to a variety of associated operations.

² It is perhaps worth while in passing to note also that such concepts as "levels" and "emergence" seem to be most readily definable upon the basis of this consideration.

opposite method has been pursued and is still recommended by philosophers in good repute: namely, a method based on predilection for ultimate and unattached simples, called by various writers essences, data, etc. The question of whether we should begin with the simple or the complex appears to me the most important problem in philosophic method at the present time, cutting under, for example, the traditional distinctions of real and ideal. Or, if it be said that while perforce we are compelled psychologically and practically to begin with the complex but that *philosophy* begins only when we have come upon simples, the problem of method still remains. Are these simples isolated and self-sufficient, or are they the results of intellectual analysis, themselves intellectual rather than existential in quality, and therefore of value only in the degree in which they afford us means of arriving at a better understanding of the complex wholes with which we began? Time forbids consideration of this fundamental question. I content myself with observing that the hypothesis that ultimate and detached simples are the only reals for philosophy seems to be the sole logical alternative to the position that the wider and more complex the range of associated interaction with which we deal the more fully is the nature of the object of philosophic thought revealed to us. Hence, the issue as to method reduces itself to the question whether isolated simples can be asserted without self-contradiction to be ultimate and self-sufficient on their own account. Those who do not accept them as the real, appear committed to the position herein stated.

While the fact of association and of range of associations as determining "degrees of reality" gives us our starting point, it gives *only* a starting point for discussing the value of "social" as a philosophic category. For by the

social as a distinctive mode of association is denoted specifically human forms of grouping, and these according to the findings of science appear only late in time. Hence, the objection which readily occurs to mind. The view that "social" in its characteristically human sense is an important category is met with the retort that, on the contrary, it is but a highly special case of association and as such is restricted in significance, humanly interesting of course, but a matter of detail rather than of an important principle. My introductory remarks were intended as an anticipatory reply to such an objection. Association barely by itself is a wholly formal category. It acquires content only by considering the different forms of association which constitute the material of experience. Thus, while it is admitted that society, in the human sense, is a form of association that is restricted in its space-time manifestation, it cannot be placed in contrast with association in general. Its import can be determined not by comparing it with association in its generic formal sense, but only by comparing and contrasting it with other special types of association.

This fact gives what has been said regarding the importance of range and complexity of association as a philosophic measure its special import. If reference to association is to be anything more than a ceremonial and barren act of deference, if it is to be used in any enterprise of philosophic description and understanding, it indicates the necessity of study and analysis of the different modes of association that present themselves in experience. And the implication of our argument is that in such a comparison of definite types of association, the social, in its human sense, is the richest, fullest and most delicately subtle of any mode actually experienced. There is no need to go through the form of discovering, as if for

the first time, the different typical modes which are to be compared and contrasted. They have been made familiar enough in the course of thought. Aside from social, whose thoroughgoing admission still awaits adequate acknowledgment, they are the physical, the vital or organic, and the mental. The gist of our problem consists in deciding which of these forms presents the broader and fuller range of associations. Association in general is but a matrix; its filling are the facts of association actually displayed in nature. Indeed, the category of association is but a highly abstract notation of what is formally common to the special modes.

Before coming, however, to this affair of comparison, which constitutes the main topic of this paper, it will be well to clear the ground of certain notions which led to misconstruction and depreciation of the meaning of "social" as a category. A moment ago I referred to the facts of association as they are actually displayed in human life. The reference implied that social facts are themselves natural facts. This implication goes against preconceptions engendered by the common opposition of the physical and the social sciences; by the tacit identification, in other words, of the natural sciences with the purely physical. As far as this idea lingers in the back of the head, social and natural are oppositional conceptions; the attempt to find a key by which to read the cipher of nature in the social is then immediately felt to be absurd; this feeling then operates to effect the contemptuous dismissal of the "social." Denial of opposition between the social and natural is, however, an important element of the *meaning* of "social" as a category; and if anyone is interested in finding out the intent of those who would employ "social" as a philosophic category, that one should begin by asking himself what are the implications of the current separation of natural

and social sciences, and whether upon reflection he is willing to stand by them. A denial of the separation is not only possible to a sane mind, but is demanded by any methodological adoption of the principle of continuity, and also, as will be indicated later, by social phenomena themselves. Upon the hypothesis of continuity—if that is to be termed a hypothesis which cannot be denied without self-contradiction—the social, in spite of whatever may be said regarding the temporal and spatial limitation of its manifestations, furnishes philosophically the inclusive category.

A two-fold harm is wrought by the current separation of social and natural science and by accepting the meaning which attaches to social after it has been thus divorced. The chief point at which philosophy may be of aid in the pursuits of the social sciences lies precisely here. In the degree in which what passes for social science is built upon the notion of a gap between natural and social phenomena, that science is truncated, arbitrary and insecure. An analytic survey of the present status of the social sciences would be needed to justify this remark. But there are only a few sociologists who have ventured as yet to assert that there is something distinctive or unique in social phenomena; so we are met with a paradoxical situation in which social phenomena are isolated from physical and organic considerations and yet are explained in physical, organic or psychological terms instead of in characteristically social terms. In psychology the persisting tradition of a purely individualistic and private subject-matter is to be attributed directly to neglect of the social conditions of mental phenomena, while indirectly this neglect goes back to a separation of social from natural: since only acknowledgment of the continuity of the social and the natural provides the intermediary terms which link psychological

phenomena with others. Some forms of behaviorism, in reaction against the unnatural isolation of the physical and mental, merely throw the latter overboard entirely, and reduce them to the terms of the material dealt with in purely physical science. In political science may be noted an oscillation between the adoption of non-natural categories, such as a transcendent "will" and the resolution of political phenomena into physical terms of conflict and adjustment of forces. A recent economic writer has asserted that economic science has so neglected the place of technology in industry that a generation has gone forth which, although "educated" in economic science, is almost wholly ignorant of economic affairs.³ Technology is evidently a matter that connects directly with the development of physical science; the point, instead of being an incidental one, can be shown to be intimately connected with all the sound objections brought against the abstraction of the "economic man." The economic man cannot be set in his place in social phenomena, in his actual relations to legal, political, technological and other cultural institutions, until these are connected with natural phenomena.

These are but too casual and abbreviated hints of the meaning of the assertion that the performance of the service which philosophy might theoretically render to the social sciences waits upon the frank acknowledgment of the social as a category continuous with and inclusive of the categories of the physical, vital and mental.

This reference to the sciences is not to be regarded, however, as implying an adoption of that conception of philosophy which identifies it exclusively with either an analysis or a synthesis of the premises or results of the special sciences. On the contrary, the sciences themselves are outgrowths of some phase of social culture, from which

³ Tugwell, *Industry's Coming of Age*, p. vii.

they derive their instruments, physical and intellectual, and by which their problems and aims are set. The only philosophy that can "criticize" the premises of the special sciences without running the danger of being itself a pseudo-science is that which takes into account the anthropological (in its broadest sense) basis of the sciences, just as the only one that can synthesize their conclusions, without running a like danger, is the one which steps outside these conclusions to place them in the broader context of social life.

In now turning to the main point, the social as a ranking philosophic category, because it is indicative of the widest and richest range of association empirically accessible (and no apology is offered for basing philosophy upon the empirically manifest rather than upon the occult), it is necessary to point out a certain ambiguity of language which because of brevity of exposition, necessarily attaches to our statement. Social *phenomena* are not of themselves, of course, equivalent to social as a *category*. The latter is derived from the former by means of an intellectual analysis which determines what is their distinctive character. Now I am not here dealing with the important and eventually imperative problem of the category of the social, or the determination of the characteristics which constitute the distinguishing nature of the social, but rather with social phenomena *en gross* as comprehending, for philosophic analysis, physical, organic and mental phenomena in a mode of association in which the latter take on new properties and exercise new functions. In other words, I am here implying that social phenomena do as a matter of fact manifest *something* distinctive, and that that something affords the key to a naturalistic account of phenomena baffling philosophic interpretation when it is left out of account. To those who accept this view, the burden of proof

as to the value of "social" as a metaphysical category lies upon those who habitually treat its worth as trivial. For what do *they* mean by social phenomena? If social phenomena are not an exemplification upon the widest and most intricate scale of the generic trait of associated behavior or interaction, what do they signify? I see but one kind of answer open to them, covering two alternatives: Either social phenomena are anomalous, an excrescence or intrusion, supervening in an accidental and meaningless way upon other phenomena, or else they have no distinctive import, being in reality *nothing but* physical, vital or psychological phenomena. Does not each of these views contradict the observable traits of social phenomena?

Upon a *prima facie* view, social phenomena take up and incorporate within themselves things associated in the narrower way which we term the physical. It gives a ludicrous result to think of social phenomena merely as lying on top of physical phenomena; such a notion is negated by the most casual observation of the facts. What would social phenomena be without the tools and machines incorporate within themselves the physical factor of land, including all the natural resources (and obstacles) and forms of energy for which the word "land" stands? What would social phenomena be without the tools and machines by which physical energies are utilized? Or what would they be without physical appliances and apparatus, from clothes and houses to railways, temples and printing-presses? No, it is not the social which is a superficial category. The view of those is superficial who fail to see that in the social the physical is taken up into a wider and more complex and delicate system of interactions so that take on new properties by release of potentialities previously confined because of absence of full interaction.

The same consideration applies to the inclusion within

the social of the vital or organic. The members of society are living human beings with the characteristics of living creatures; but as these enter into distinctively human associations their strictly organic properties are modified and even transformed. Certain physiological factors of sex, of procreation, immaturity and need of care, are assuredly implicated in the functions expressed in family life. But however great the role of animal lust, there is something more in any family association than bare physiological factors. The fact of transformation of the purely organic by inclusion within the scope of human association is so obvious—note the significant case of change of cries into speech—that it has indeed led to belief in the intrusive intervention of unnatural and supernatural factors in order to account for the differences between the animal and the human. The disjunction between the assertion that the human is the merely animal and the assertion that an extraneous force is obtruded is not, however, exhaustive. There remains an alternative which is most fully confirmed by empirical fact, namely that the difference is made when new potentialities are actualized, when the range of interactions that delimits the notion of the organic is taken up into the wider and more subtly complex association which forms human society.

Since traits derived from the physical mode have been admitted into philosophy, since materialism in other words is at least grudgingly admitted into philosophic companionship, and since organic philosophies, framed on the pattern of vital phenomena, upon conceptions of species, development and purpose, are freely admitted, it seems arbitrary, to say the least, to exclude the social from the role of a legitimate category.

That the mental has a recognized claim to serve as a category of description and interpretation of natural ex-

ister
ophi
ories
deny
But
to ra
Now
said
phen
when
and
to ac
that
phys
inter
exist
pear
form
port
to oc
A
emph
a su
whic
phil
matt
isten
cussi
whet
esthe
osop
lemn
sion
natu

istence is evident in the very existence of idealistic philosophies. There are those who deny the ability of these theories to execute their claim, just as there are those who deny the capacity of the physical and vital to make good. But thought, as well as matter and life, is at least admitted to rank as a respectable figure in the gallery of categories. Now of the mental as of the physical and organic it may be said that it operates as an included factor within social phenomena, since the mental is empirically discernible only where association is manifested in the form of participation and communication. It would therefore appear legitimate to adopt as a hypothesis worthy of being tried out the idea that the ulterior meaning of the mental as well as of the physical and vital is revealed in this form of associational interaction. The implication is not they have no describable *existence* outside the social, but that in as far as they appear and operate outside of that large interaction which forms the social they do not reveal that full force and import with which it is the traditional business of philosophy to occupy itself.

After this statement of the intent of the enterprise of employing the social as a category, it remains to sketch in a summary fashion a few specimens of its implications which are relevant to the clarification of some outstanding philosophic issues. We may conveniently begin with the matter just referred to, the place of the mental in the existential scheme of things, using for purposes of our discussion as the equivalent of "mental" the fact of *meaning*, whether direct as in cognition of objects, or indirect as in esthetic, affectional and moral relations. The state of philosophic discussion exhibits a dilemma, or rather a trilemma. The mental is viewed (i) as a mysterious intrusion occurring in some unaccountable way in the order of nature; (ii) as illusory, or, in current language, as an

epiphenomenon; and (iii) as ontological, whether as a section of being on the same level with the physical section, or as the Being of which so-called physical things are but disguised forms or "appearances." It may be argued that the persistence of the problem and of these widely opposed modes of solution is itself strongly indicative that some factor of the situation, the one which is the key to understandings has been omitted. In any case, the persistence of these unreconcilable conceptions is a challenge to search for something which will eliminate the scandal of such sharp antagonisms in interpretation. Now when we turn to the social, we find *communication* as an existential occurrence involved in all distinctively communal life, and we find that communication effects meaning and understanding as conditions of unity or agreement in conjoint behavior. We find, that is, meaning where it is not an anomaly nor an accidentally supervening quality but a constitutive ingredient of existential events. That is, we find meaning as a describable, verifiable empirical phenomenon whose genesis, modes and consequences can be concretely examined and traced. It presents itself not as an intrusion, nor as an accidental and impotent iridescence, nor as the reduplication of a structure already inhering in antecedent existence, but as an additive quality realized in the process of wider and more complex interaction of physical and vital phenomena; and having a distinctive and concretely verifiable office in sustaining and developing a distinctive kind of observable facts, those namely which are termed social. We do not then have to resort to purely metaphysical and dialectical considerations, adopted *ad hoc*, in order to "save" the reality and importance of the mental. The realm of meanings, of mind, is at home, securely located and anchored in an empirically observable order of existence. And this order stands in genetic continuity with

physical and vital phenomena, being, indeed, these phenomena taken up into and incorporated within a wider scope of associated interactions. We do not have to read back the mental into the antecedent physical, much less resort to the desperate measure of making it so all-inclusive that the physical is treated as a disguised and illusory "appearance" of the mental. The social affords us an observable instance of a "realm of mind" objective to an individual, by entering into which as a participating member organic activities are transformed into acts having a mental quality.

These considerations are not supposed to demonstrate the truth of the position taken; but they are seriously proposed to indicate a hypothesis which is worthy of trial; as a hypothesis which starts from a *vera causa*, that is, from an empirically verifiable fact, instead of from concepts which have no such observed locus of their own but which are invented simply to account for facts otherwise inexplicable. In the second place, the actual structure of knowledge viewed in relation to the operations by which it is concretely established to be knowledge in the honorific sense, that is as tested and justified, as grounded, instead of as mere opinion and fantastic belief, can be understood only in social terms. By knowledge as grounded I mean belief in relation to evidence that substantiates it. Now the simplest distinction that can be drawn between objects of knowledge in this sense and mere matters of opinion and credulity, or even of thought however internally self-consistent and formally valid, is the distinction between the socially confirmed and the privately entertained. Opinion and theory as long as they are uncommunicated, or as long as, communicated and shared, they are unconfirmed in conjoint behavior are at best but candidates for membership within the system of knowledge. To labor

this point is to weaken it. It is a truism that science is science because observations, experiments and calculations are so conducted as to be capable of report to others and repetition by others. Now this report and repetition are wholly misconceived when thought of simply as external additions to thought complete in itself. They signify that thought itself is conceived and developed in such terms as to be capable of communication to others, of understanding by them, and of adoption and utilization in cooperative action. Report, communication, is not a bare emission of thoughts framed and completed in private soliloquy or solipsistic observation. The entire operation of individual experimentation and soliloquizing has been influenced at every point by reference to the social medium in which their results are to be set forth and responded to. Indeed what has been said is an understatement. It is not simply that the characteristic findings of thought cannot pass into knowledge save when framed with reference to social submission and adoption, but that language and thought in their relation to signs and symbols are inconceivable save as ways of achieving concerted action.

In passing, it may also be remarked that the reference to private thought as a *candidate* for knowledge through incorporation into conjoint associated action (which also involves, be it recalled, physical conditions and hence is subject to test by physical consequences), throws light upon and may give the key to another mystery of philosophic speculation—namely the nature of mind as subjective. For the latter when it is interpreted from the standpoint of the social as a category, does not appear as an anomaly, much less as a bogey, an intrusive and wholly undesirable source of error. Thinking and its results present themselves as indeed hypothetical, demanding trial in terms of social action, and hence as subject to error and defeat.

But
const
for r
tablis
claim
very
be te
the b
parti
cies,
the f
scien
kept
princ

I
of p
ceivi
emph
We
mora
the c
its c
prefe
colle
dent
It w
the p
and
and
the v
its e

4
article
nial P

But they also offer themselves as having a positive and constructive office. For they are not candidates merely for reception into the social *status quo*, the received and established order of associated behavior, they are rather claimants for a changed social order to be effected in the very action which they promote and by which they are to be tested. Sometimes the claim is narrow, affecting only the behavior of a selected group who are experts in the particular field; sometimes, as in the proposal of new policies, it is wide in the appeal which it virtually makes. But the former type, addressed primarily say to a group of scientific specialists, has a way of expanding; it cannot be kept cooped up; and in any case there is no difference in principle.

In giving illustrations, one is embarrassed by the range of philosophic problems which suggest themselves as receiving illumination and clarification when the social is employed as a category of description and interpretation. We may, however, draw, almost at random, upon the moral field. Consider the recurrent discussion concerning the objectivity of moral distinctions and judgments, with its ceaseless vibration between reduction of them to private preferences, none the less private when they happen to be collectively entertained, and recourse to purely transcendent considerations in order to "secure" their objectivity. It would be dogmatic to assert in this casual allusion that the problem is solved when the social is used as a category, and the social is seen to incorporate the physical, organic and psychological; but no one can reasonably deny that the whole problem takes on a very different aspect when its elements are placed in this context.⁴

An allied topic concerns the "naturalness" of the moral

⁴ Compare the treatment of the objectivity of esthetic judgments in the article "*On the Genesis of the Aesthetic Categories*" by J. H. Tufts, *Decennial Publications of the University of Chicago*, Volume III.

life of man. Those who assert that it is natural, are met by the counter-assertion that since such a view reduces the moral life to a strictly animal plane; the contention that severance of moral life from the animal involves the implication of the unnatural or supernatural character of the former is of no weight in the face of facts. This sharp disjunction falls to the ground, however, when the distinctive forms of association characteristic of the life of man in social relations are recognized, for this recognition not only admits but asserts that these relations realize new and unique qualities not manifested in the lesser areas of natural association. A generalization of what is involved in this issue is found in a theory familiar to students of the history of thought. A succession of thinkers, from Herder and Kant to Hegel, have asserted that the significance of the history of humanity is found in the struggle of man to emerge from a state in which he was wholly immersed in "nature" to a state in which "spirit" is wholly triumphant, and where triumph involves a sublimated cancellation of the physical and animal. It is submitted that whatever is empirically verifiable in such a doctrine is better stated in terms of the constant remaking of the physical environment and the living organism which occurs when the latter come within the scope of the culture carried in human society. It is a fact rather than a speculation that physical and animal nature are transformed in the process of education and of incorporation of the means and consequences of associated political, legal, religious, industrial, and scientific and artistic institutions. "Spirit" in the doctrine referred to is a transcendent and blind name for something which exhibits itself empirically as that phase of social phenomena called civilization.

The philosophic issues mentioned are cited only as illustrative specimens. They afford at most but a skeleton-

like t
They
descr
and t
by "
claim
whol
is m
conso
diale
know
is th
sible
point
of th
case
emph
adop
phil
and
tiona
piric
erty
laris
cons
a dia
ticul
of co
actio
thes
parti
socia
tion
tion

like table of contents and a highly incomplete one at that. They are given as indications of a scheme of philosophic description and interpretation that has to be rounded out and filled in in order to realize and to test what is signified by "social" as a philosophic category. It is the historic claim of philosophy that it occupies itself with the ideal of wholes and the whole. It is submitted that either the whole is manifested in concretely empirical ways, and in ways consonant with infinite variety, or else the whole is but a dialectical speculation. I do not say that the social as we know it is the whole, but I do emphatically suggest that it is the widest and richest manifestation of the whole accessible to our observation. As such it is at least the proper point of departure for any more imaginative construals of the whole one may wish to undertake. And in any case it furnishes the terms in which any consistent *empirical* philosophy must speak. Only by whole-hearted adoption of it as a ranking fact and idea can empirical philosophy come into its own, and escape the impotency and one-sidedness which has dogged the traditional sensationalistic empiricism. The commitment of Lockean empiricism to a doctrine that ignored the associative property of all things experienced is the source of that particularistic nominalism whose goal is solipsistic scepticism. In consequence empiricism ceased to be empirical and became a dialectic construction of the implications of absolute particularism. By rebound, it induced recourse to principles of connection extraneously supplied, whether by "synthetic action of thought" or by eternal essences. In the end, these systems rise or fall with the truth of the empirical particularism against which they have reacted. Thus the social as a category is as important in the critical evaluation of recent systems of thought as it is in direct application to problems of matter, life and mind.

COLUMBIA UNIVERSITY.

JOHN DEWEY.

THE CHARACTER OF REALITY

1. Man's experience declares itself to be, at bottom, his search for Reality. In endlessly diverse ways and under manifold forms he pursues the real; consciously or unconsciously, explicitly or implicitly, it is the real that in the end constitutes the object of his endeavor. It is not quite accurate to say that his first attempts are undertaken unconsciously, while his later are largely deliberate. To some degree this is undeniable; but it is truer that at any moment, and at any stage in the mind's progress, what has hitherto been implicit may become plainly explicit by being made the individual's clearly recognised goal. This constitutes the substance of even the savage's crudest superstitions, just as it does of the child's systematic activity in play. For the extreme simplicity of both of these modes of self-expression must not blind us to the fact that one is the root of all the highest forms of religion, and the other of the most intricate and strenuous games. Whatever names may be given to it therefore—the object of desire, source of satisfaction, content of knowledge, *summum bonum*, or what not—are only varying expressions for one and the same ultimate end—Reality.

It may be objected that widely differing schools of thought have repeatedly maintained that Reality lies ever beyond human attainment—that our experience, in other

word
as he
from
in in
worse
trans
come
undow
own
nome
probab
Y
they
ultim
be de
instea
more
tents
form
trast
larly
or S
nome
is the
the r
they
guise
nates
sun,
and
whic
E
are s
unqu

words, remains prisoned within the sphere of the unreal, as helplessly as the souls in the Inferno were excluded from all hope of Paradise. The world with which we are in immediate contact is thus contrasted with, or (still worse) severed from, the Absolute, the Unknowable, transcendent Deity or the unknown God. Reality then becomes that ever elusive substance or thing-in-itself which undoubtedly exists, but only as impenetrably veiled by its own attributes, so that mind confronts merely the phenomenal while the noumenal escapes it:—the standpoint of probably the majority of scientists.

Yet even under these conditions, however desperate they may become, it is plainly the real that constitutes the *ultimate* standard of reference, although it is supposed to be described in purely negative terms. If (for example) instead of the grandiloquent "unknowable" we use the more commonplace "not knowable," then it is just the contents of actual knowledge (whatever these may be) that form one of the essential terms of the fundamental contrast, apart from which it becomes meaningless. Similarly the very transcendence of the Absolute, or of Deity or Substance, forms the basis of our estimate of the phenomenal as such, either in the sense that the phenomenal is the manifestation of these transcendent entities, or (in the reverse direction) that whatever its characters are, they are precisely *not* the characters of Reality. In some guise or other then, the concept of Reality finally dominates the situation. Just as when we turn away from the sun, our shadow springs from its own light, so scepticism and agnosticism always indirectly involve that Reality which they explicitly seek to deny.

But negative philosophic and religious attitudes that are so persistent and deeply rooted in human nature must unquestionably possess some basis within experience it-

self; and what this is it is not difficult to discern. For they rest, at bottom, on the repeated *failure* which has attended man's age-long search for the real—on the vanity of his highest ideals which, as soon as they are attained, prove to be only Dead Sea fruits. Knowledge, beauty, happiness—each alike too often yields a painfully temporary satisfaction; and the inevitable result is the familiar conviction that Reality, from its very nature, will always elude our pursuit. This belief has been given definite philosophic form in many ways. In ancient Greek thought the eternal flux and the chaotic dance of atoms express the same fundamental standpoint as does the mystic "substance" of medieval philosophy, and Bergson's insistence that the character of Reality can never be apprehended by any intellectual processes, but only by an "intuition" whose mode of operation has always seemed to me to be inexplicable.¹

All such negative attitudes therefore, whether they point on the one hand to a transcendence which raises the real altogether beyond our reach, or on the other to an agnosticism which severs human experience from Reality, appear at first sight to find an unquestionable justification in the very content of that experience itself. Even when Mr. Bradley maintains that Reality is a harmonious experience, it still remains incomprehensible and therefore transcendent, since this is all that we can say about it. How its eternal harmony is sustained—how those contradictions which seem to us insurmountable, because they are inherent in the constitution of everything, are ultimately removed—this the very conditions of knowledge will always prevent our understanding. For such comprehension would itself constitute that absolute experience which lies beyond the range of all finite mind, and so

¹ Cf. "The Failure of Bergsonism," *The Monist*, Vol. xxxiii, 1923, pp. 219-239.

would add still another insuperable paradox to those already existing, by demanding that the finite should become infinite. "We cannot possibly construe such an experience to ourselves. We cannot imagine how in detail its outline is filled up. . . . Truth, when made adequate to Reality, would be so supplemented as to have become something else—something other than truth, and something for us unattainable."²

2. But while all these facts can not be denied, they may still be given a totally different interpretation. For it has never been sufficiently recognised that there are two possible types of transcendence, only one of which generally receives consideration. Transcendence then may consist, not as is generally supposed in opposition and absolute severance, but on the other hand in greater fullness, in richer abundance, or as a far higher level of something that in itself is already quite familiar or even commonplace. It is thus quite legitimate to say that a multi-millionaire's wealth transcends my own limited means, since it will always defy my powers of attainment. It is useless to say that if I had different abilities, I too might become a millionaire. For this is to require an altogether inadmissible change in the conditions of the actual situation. It is like arguing that if a jellyfish possessed a certain type of human mind it could understand the binomial theorem; which is the same as saying (in more general terms) that if the finite, *per impossibile*, became infinite, it could comprehend the Absolute. The ruling conditions plainly exclude these suggestions in advance, and render them therefore illogical; while in other respects it is similarly true that Einstein's knowledge of mathematics transcends my own, just as the goodness of a saint transcends my own moral achievements. In the

² Bradley, F. H., *Appearance and Reality*, pp. 183, 548.

opposite direction ordinary human knowledge and emotion and volition not merely exceed the mental capacities of a dog, and much more of an amoeba, but literally transcend these because, while amoeba and dog remain what they are, they are eternally excluded from spheres which to ourselves are (as I have already observed) "familiar and commonplace." So that if—again *per impossibile*—two amoebae could discuss the problem, they would quite naturally conclude that man's experience was transcendent, not in the sense that it was far richer than theirs but was absolutely severed from their own.

And yet they would be completely wrong; not however in their description of the facts but in their interpretation. For while, as I have just insisted, there undeniably exists a literal transcendence here, still this is quite consistent both with continuity and (to an important degree) with positive identity. This is plainly implied by the principle of evolution, whatever specific form it may assume. In its earlier phases, as is well-known, unimpaired continuity of development was deemed to be essential; and it may readily be conceded that this standpoint unduly simplified the entire problem. But even the weightiest insistence on the more recent aspect of "emergence" leaves the evolutionary process intact; it still remains, that is to say, emergent or creative *evolution*. Underlying, and indeed originating, every advance in emergence there exists a continuity which is, however, never superficial, but on the contrary so deeply seated that it eludes all current methods of investigation. But the earlier history of science should be amply sufficient to warn us against too lightly assuming that, because it cannot yet be discerned, it is therefore nonexistent; while, still further, so fundamental a continuity must imply in the end some measure of identity between even the most contrasted forms of

being
form
into
the
elect
in o
that
thus
as y
form
ing
ing
Rea

sph
beco
tere
evol
in a
sign
Thi
ator
sun
uni
true
reig
ism
stea
ods
ena
con

bot
cont

being.³ Examples of this truth are plentiful. The transformation of all the diverse forms of physical energy one into the other; the fact that the widely different atoms of the chemical elements are all "variations" on the same electronic "theme;" the inherence of time and space within one incalculably vast continuum; the recent suggestion that matter itself is uninterruptedly being annihilated and thus converted into stellar radiation, which again, in some as yet unknown way, may be recast into the material form: all combine with many more familiar facts concerning life and mind to show that a profound and far-reaching unity holds within its grasp all the protean types of Reality.

3. And as in the realm of existence, so it is in the sphere of thought. The universality of natural law is becoming ever more clearly manifest. All the far scattered millions of stars follow the same path of agelong evolution, performing their stately manoeuvres like soldiers in a single well drilled army and radiating ceaseless energy signals, as it were, across the fathomless depths of space. This macrocosm is reflected in the microcosm; for every atom is a solar system in miniature, the central nuclear sun controlling its satellite electrons. But law is not only universal in this general sense; the same principle holds true in two more specific ways. In the first place the reign of law involves the operation of dynamic mechanisms; and this again (in the second place) results in the steady expansion of the application of mathematical methods and formulae, both to express the changing phenomena and to solve the inexhaustible series of problems which confront scientific investigation.

That the material universe is thoroughly mechanical, both on its largest scale and its infinitesimal proportions,

³ Cf. Professor Lloyd Morgan:—"through emergence there is progress in continuity." *Emergent Evolution*, p. 5.

is today as commonplace a principle as was the ancient belief that stars and streams were controlled by their respective gods. It is still debated, however, whether these physical mechanisms underlie the processes of life; but on this point, in my own opinion, all forms of modern vitalism which categorically deny the sufficiency of mechanical explanations occupy exactly the same treacherous standpoint as did nineteenth century theology in its retreat before the establishment of evolution. The steady advance of biochemical and physiological discovery compels vitalists to abandon one position after another, and to seek refuge in theories which steadily become more and more vague and unscientific—defects which any philosophic merits they may claim do little to remove. The phenomena of heredity and sex, together with the most delicate metabolic interchanges, more and more manifest themselves as extremely intricate chemical reactions, that are most delicately coordinated in the biological interests of the organism and species. Similarly, throughout the spheres of mind and of society respectively, precise interrelations between the various factors are proving to be the indispensable conditions of efficiency and progress.

It is perfectly natural, at the same time, that this insistence upon the universality of mechanism should arouse strenuous opposition; and for this there are two good reasons. The first is the suspicion that an undue simplicity is being introduced into the nature of things; while the second is the belief that mechanism inevitably substitutes fatalism for freedom; and with this come spiritual lassitude and despair. But despite the soundness of the instincts which prompt them, both these objections are in fact altogether groundless. For I have already insisted on the unexpected, and indeed almost incalculable, complexity of the phenomena which current research continues to re-

veal.
but e
delica
truth
that
same
I
mech
these
that
same
any
lated
they
comp
separ
this
simp
ever
comm
ties
of t
quite
simp
acter
life-l
the
plan
vers
atom
"org
whic
only
taile

veal. Not only throughout the realms of life and of mind, but equally within matter itself, intricacy of structure and delicacy of interaction are indissolubly conjoined; it is in truth precisely the intimate fusion of these two attributes that renders the advance of thought so arduous, yet at the same time so triumphant.

It is equally mistaken to suppose that the category of mechanism is opposed to that of organism. Each of these, on the contrary, necessarily involves the other, so that they form two inseparable aspects of one and the same situation, like *e. g.* the convexity and concavity of any given curve. For while either of these may be isolated and independently investigated, still it is plain that they must be associated if our geometry is to be at all complete. In exactly the same way it is impossible to separate one mechanical detail permanently from another; this can be done only temporarily, during the earliest and simplest stages of investigation. Further research however always proves these details to be dynamically interconnected, in such a way as to constitute the single unities or wholes which we call "organisms." The meaning of this term, unfortunately, is far too narrow. It has quite naturally been first of all applied to living things, simply because they most plainly exhibit the essential characteristics of "organisms;" their constitutions and their life-histories both alike being fairly easily brought within the scope of ordinary observation. But animals and plants are, of course, not the only "organisms" in the universe; for nations on the one hand and solar, stellar and atomic systems on the other, all equally deserve to be called "organisms," since they also have structures and histories which are, however, either so enormous or so minute that only the most painstaking research can discern their detailed characters.

The principle of mechanism therefore is thoroughly antagonistic to any radical simplicity; and it is equally foreign to all belief in fatalism. In this respect (once again) the crucial issue is one of relative complexity; and since I have previously dealt with "The Problem of Freedom" in an earlier volume of this Journal,⁴ it must here be sufficient to repeat that the more intricate and delicately adjusted any mechanism or organism becomes, the freer it also becomes; and this, still further, not by any accident or miracle but naturally and logically. It is quite unnecessary, therefore, to appeal here to the influence of contingency or "indetermination" throughout certain regions of existence. For not only is actual contingency increasingly disproved by every fresh discovery, so that its presence is nothing more than the reflection of human ignorance, but the principle really involves the very negation of true freedom. If new events and processes are not systematically connected with all other events in such a way that their mutual coordination becomes possible—and this is all that Determinism and Mechanism ultimately mean—then there plainly exists some degree at least of absolute chaos in the universe. If, again, this "contingent" element is sufficiently important to form the substance of a philosophic principle, this chaos cannot be merely negligible, but must, on the contrary, operate on a highly extensive scale; nor can we have any guarantee that it may not finally swamp all order and law in some irremediable catastrophe. To maintain the contrary—to believe (that is to say) that the contingent is not after all actually chaotic—is plainly to believe that it is in the end amenable to some controlling law so complex and profound that we can not as yet discern it; and it is altogether erroneous to deny this in the interests of spiritual freedom

⁴ Vol. xxxiii, pp. 321-343. I need add only that freedom is inseparable from novelty, uniqueness and creation.

or ger
foolish
ence to
art or
princip
their p
verse
ciple r
conting
things

4.

mentio
seem a
and y
that th
Grotes
this be
pation
matics
unfort
science
is a m
consider
ing an
terial
from f
truer
equally
ences,
import
so lon
same
witchc
terpre

or genius. For genius is never lawless, as is so often foolishly supposed. Rather does it always work in obedience to the highest laws of its own sphere—of literature, art or science as the case may be—thus expanding earlier principles by revealing new ones still more rigorous than their predecessors. If then we choose to regard the Universe as the manifestation of Spirit or Deity, this principle must be infinitely expanded; which means that not contingency, but order or reason, lies at the heart of things.

4. Reverting now to the second essential feature mentioned at the beginning of the previous section, it must seem at first sight a far cry from Deity to mathematics; and yet we may recall the ancient Pythagorean maxim that the secret of existence is to be found in Number. Grotesque as were many of the later forms assumed by this belief, it nevertheless constitutes a remarkable anticipation of the vast range and applicability of the mathematics of today, and still more of tomorrow. It is again unfortunate that the very symbols and formulae of the science make it appear to be only a game, even though it is a mysterious and magical game. And yet very little consideration shows that practically all modern engineering and invention—which means in effect the entire material basis of civilisation—would be quite impossible apart from highly abstruse theoretical calculations. This is still truer as regards the progress of all the physical, and equally of many of the biological and even the social, sciences, as is at once evident when we recall the increasing importance of statistical and correlation methods. Now so long as we continue to regard mathematics with the same suspicion that our ancestors entertained towards witchcraft, the whole situation will be profoundly misinterpreted. The secret of the mathematician's ability is

really quite simple; it is only the perfectly natural outcome of what has just been referred to—that is of the presence of system and of law throughout the universe. For it follows from this that it is always possible, to some degree at least, to dissect out the elemental factors in such a way as to exhibit their exact interrelations with an ever fuller precision of detail; and it is upon this task that the mathematician concentrates. He pursues (in other words) the analysis of phenomena to its utmost limits, never pausing until he has expressed every detail in all its possible, or even impossible, aspects. Perhaps the most obvious, and at the same time most striking, example of this is the success with which the entire material universe may theoretically be mapped out, by means of the proper coordinates, so as to obtain a formula which, in spite of its simplicity, “holds at every point of the universe, that is to say at every point of space at any moment of time.”⁵ It is at once plain what an enormous power must be conferred by such an intellectual weapon; and although its untold potentialities lie hidden in the future, still we may be sure that it is an “open sesame” which will unlock many of the closed doors of Reality. Equally obvious must be its remoteness from ordinary terminology, since this is adapted to deal only with the surface of things, sufficiently to enable everyday intercourse to proceed.

But in thus emphasizing the essentially analytical aspects of mathematics an equally important complementary truth is too often forgotten. For in dissecting out the diverse details of the structure of Reality, we at the same time discover the exact way in which these are connected together among themselves; unless indeed this result is attained the analysis has itself been wrongly carried out, no matter how many separate factors may have been isolated.

⁵ Borel, *Space and Time*, p. 170.

This
ling
to p
the s
cons
piece
matl
ish
point
rema
this
in t
case
an e

hold
pan
who
been
acte
crea
whi
and
app
of r
say
ema
“re
and
the
tak
tive
oth

This is clear if we consider an expert mechanic dismantling a new type of motor engine; for he not only takes it to pieces, as indeed any clever boy may do, but he gains at the same time an insight into the general principles of its construction. Of course he must *begin* by taking it to pieces, just as the chemist, the biologist, but above all the mathematician, must begin; and if we are sufficiently foolish we can describe this as sheer destruction. But the point is that neither the mechanic nor the scientist ever remains content with analysis alone. He always regards this as only preliminary to a new synthesis which results in the rebuilding of the machine, or the universe, as the case may be; only this rebuilding is now carried out with an ever profounder understanding and clearer vision.

It must follow from all this that the mathematician holds the key to a very large proportion of the future expansion of knowledge; he is, as it were, the pioneer upon whom almost the entire advance depends, as has so often been proved by the history of science itself. "It is a characteristic rôle of mathematicians," observes Borel, "thus to create abstract theories which seem mere pretty ideas, but which afterwards turn out to be of value for immediate and urgent needs."⁶ Hence arises that rapidly widening applicability of mathematics to so many unexpected phases of modern experience; and if we choose to describe this by saying that everything is being "reduced to abstract mathematical terms" we must at once add that the so-called "reduction" is the indispensable preliminary to all sound and permanent construction, so that the abstract is always the avenue to the concrete. But this, again, must not be taken to mean that mathematical truth is either exhaustive or exclusive; it must continually be supplemented from other sources.

⁶ Cf. his interesting examples, *op. cit.*, p. 184.

5. Thus far we have discerned, as characteristics of reality, unbroken continuity, expanding diversity, steadily advancing complexity and universal dynamic activity. This means that the later types of being are more delicately and intricately organised than their predecessors; and it must now be observed further that the form of their interaction acquires a progressively different character. For it ceases to be mere *unconscious responsiveness* to external stimuli, and becomes slowly transformed into a more and more fully *conscious dominance*. This is what is really meant by being a "person" or "self"—the possession of rational consciousness which expresses itself by acquiring a constantly increasing mastery over its environment. Responsive interaction must of course persist; the essential point is that this now assumes the new type of dominance; and dominance, again, is plainly only another name for freedom, since the less subordinate we are the freer we are.

These conclusions express the true significance of the familiar facts of the course of evolution from matter to mind—from the physical to the rational. Reason enables the self to know and understand the environing universe to which it must respond in order to exist, its knowledge advancing by means of that alternate analysis and resynthesis which have already been discussed. But this implies, still further, that the self's responses arise more and more fully from within its own nature and experience, and are therefore free or spontaneous, instead of being dictated from without. Knowledge thus ceases to be mere passive contemplation, and must now be regarded as that intellectual mastery over the nature of existence which mind increasingly attains, as is expressed in the familiar phrases "grasp of a situation" or of a problem. This is much more literally true than is generally imagined; for the higher

form
dina
T
that
tion.
tions
pers
cism
and
fact
have
fore
ago,
form
be th
have
Sha
it is
to t
to t
pers
fini
wer
cry
psy
plas
phy
mer
for
inte

der
cia
tin

forms of selfhood do actually "grasp" Reality and subordinate it to their specific purposes.

This plainly suggests that it is in the nature of selfhood that we must seek the clue to the future progress of evolution. Here we must of course face the familiar objections based on the defectiveness and limitation of human personality, together with the formally philosophic criticisms of the self advanced in Mr. Bradley's *Appearance and Reality*. I have not the least desire to question these facts in themselves; nevertheless I should insist that they have hitherto been given altogether too narrow—and therefore in the end a false—interpretation. If, 300 years ago, some Columbus had uprooted all the saplings in California because they yielded to every breeze, where would be the forest giants of today? And equally foolish would it have been to criticise the childish feebleness of the infant Shakespeare or Newton or Beethoven. In all such instances it is surely obvious that we must look not to the present but to the future—not to the restricted actuality of today but to the unsuspected potentiality of tomorrow. Just so with personality, even in its "human, all too human" form. For finite selves, in the ageless course of evolution, have as it were "crystallised out" within the universe, just as actual crystals do from the liquid magma. Only selves are living, psychical and spiritual "crystals," in which an unlimited plasticity has replaced the rigidity characterising their physical prototypes. It is precisely this high plasticity of mental organisation which enables the babe to be transformed into the genius; and, similarly, the race of today into the super-race of the distant future.

Even in practical affairs this is becoming plainly evident. Man is subordinating the physical world to his social ends on an ever larger and more successful scale, cutting a Panama Canal across a continent and flashing his

messages through the immaterial ether—achievements at which posterity will smile with the same superiority that we feel towards the dark ages. In pure knowledge, again, the human mind is proving itself adequate to vast realms of existence. The Theory of Relativity, *e. g.*, illuminates the structure of the entire material universe, just as the Principle of Evolution concerns the whole of Life and Mind; and what the future holds in these respects is quite incalculable. Similarly many would maintain that in Art the aesthetic consciousness penetrates to something that is inherent in the very nature of reality, to which we can attain in no other way; and so perhaps in conduct and in religion.

Along all these widely diverse paths, then, selfhood advances to continuously higher levels without, however, ceasing to be selfhood. Slowly it becomes a more and more powerfully dominating centre within the whole, even though it must always remain finite; and this suggests the possibility (to call it nothing more) that the Supreme Real within the Universe is a self not finite but infinite. Thus we are enabled to give much more definite significance to the "Substance" of Spinoza's philosophy and the "Spirit" of Hegel's thought; a truth that is perhaps best expressed in the poet's lines—

So, through the thunder comes a human voice
Saying, "O heart I made, a heart beats here.
Face, my hands fashioned, see it in myself."

J. E. TURNER.

UNIVERSITY OF LIVERPOOL, ENGLAND.

N
there
lation
the m
press
logic
the e
the l
more
answ
of m
the A
cepti
misl
logic
amb
T
held
Reg
the
as t
cept
limit
mech
11

AN INTERNAL INCONSISTENCY IN ARISTOTELIAN LOGIC

NOTWITHSTANDING the attention which has been given during the last fifty years to the modern logic there is still considerable disagreement concerning its relation to the traditional logic of Aristotle. Opinions upon the relative merits of the two systems vary from those expressed by logicians who would relegate the traditional logic to the scrap-heap to those voiced by others who, in the exuberance of a reaction to this tendency, would regard the logic of classes as faulty and inferior. Thus one of the more recent defenders of the traditional logic writes, "In answer to this contention (that "the conception of class and of membership in a class is a decided improvement over the Aristotelian logic") it is well to point out that the conception of class is not only highly ambiguous but positively misleading. . . ."¹ The usual supposition is that Aristotelian logic within the region to which it limits itself, is neither ambiguous nor inconsistent.

This has been the usual conception of Aristotelian logic held even by those who have criticized it most severely. Regardless of whether one were in favor of, or opposed to, the retention of this science, it has been assumed, so far as the writer is aware, that given its fundamental concepts and operations it is, within the region to which it limits itself, a self-consistent system. Just as Newtonian mechanics is regarded as being self-consistent but super-

¹D. S. Robinson, *The Principles of Reasoning*, Appleton, 1924.

seded by the theory of relativity because the latter has the greater deductive fertility which will enable it to bring within one synthesis, not only the region of fact treated by Newton but also wider regions as well, so the logic of Aristotle has been regarded as a self-consistent system superseded by the logic of classes because of the wider range of application attained by the latter science. Within the Aristotelian system it has been supposed that there are no contradictions. Stated in terms of propositions this means that if one were to take any A, E, I or O proposition and infer from it by successive steps the propositions permitted according to the rules of mediate or immediate inference one would never in any case gain as a conclusion a proposition contradicting either the original proposition or a proposition consistent with it.

It was with this point of view that the writer attempted to teach both the traditional logic and the modern Boolean algebra or logic of classes. In order to avoid the confusion which would result from the use of two different systems of Euler's circles it seemed best for pedagogical reasons to use, for the Aristotelian as well as the Boolean science, the graphical symbolism to be used in the logic of classes. When this graphical method was applied to the familiar propositions concerning "just and expedient acts" given on page 303 of Jevons' *Lessons in Logic*, an unexpected difference appeared between the propositions which could be inferred according to the geometric symbolism and those which followed according to the accepted rules of inference of Aristotelian logic. A study of the problem revealed in that fact led to the conclusion about to be presented. This conclusion is very interesting and is of special significance in helping us to come to a better understanding concerning the relation between the Aristotelian and the modern logic. If the analysis which is presented

is correct, it follows that there is a fundamental contradiction in Aristotelian logic which is escaped in the logic of classes and which can be removed from the Aristotelian science only by so remodeling it at its very foundations that it becomes changed into the logic of classes.

THE INTERNAL INCONSISTENCY OF ARISTOTELIAN LOGIC

The following analysis will attempt to prove that there is an inconsistency in Aristotelian logic, by taking a given A proposition, which according to certain Aristotelian rules is entirely consistent with a given second proposition, and inferring from it, by equally 'valid' Aristotelian rules, the contradiction of said second proposition.

Let us consider, from the list of fourteen propositions concerning just and expedient acts given by Jevons on page 303 in *Lessons in Logic*, numbers 1, 4 and 5, and to Jevons' list let us add another which we may designate by the number 15. The four propositions are the following:

1. All just acts are expedient acts.
4. All inexpedient acts are unjust.
5. Some unjust acts are inexpedient.
15. All unjust acts are expedient acts.

It can be proved according to accepted rules of Aristotelian logic that propositions 1 and 15 are both consistent and contradictory.

Propositions 1 and 15 are consistent. Since proposition 1 is an A proposition its predicate is undistributed and therefore the part of the predicate to which no reference is made in proposition 1 may contain the class of unjust acts referred to in the subject of proposition 15. Thus both propositions may be true at the same time. They are, therefore, consistent according to those rules of Aristotelian logic which govern the distribution of terms.

But according to the accepted Aristotelian rules, it can be shown that propositions 1 and 15 contradict each other.

Proposition 1 implies proposition 4 according to the rule of conversion by contraposition. Proposition 4 implies proposition 5 according to the rule of conversion by limitation. Therefore proposition 1 implies proposition 5, according to the rules of the syllogism. But proposition 5 contradicts proposition 15. By obversion proposition 5 becomes "Some unjust acts are not expedient." Since this is the corresponding O form of proposition 15 which is an A, it follows according to the rules governing the opposition of propositions that proposition 5 contradicts proposition 15. But, since proposition 1 implies proposition 5, and 5 contradicts proposition 15, it follows according to the rules of the syllogism that proposition 1 implies the contradiction of proposition 15.

Since by one set of rules propositions 1 and 15 are consistent and by another equally acceptable set of rules they are contradictory, the conclusion is inescapable that Aristotelian logic is an internally inconsistent system.

At first one may be inclined to think that in bringing in proposition 15 which is similar to proposition 1, except that its subject is the negate of the subject in proposition 1, an implicit assumption of Aristotelian logic is violated. That this is not the case, and is irrelevant to our consideration even if it were true, will appear when we determine the cause of the fallacy, for it turns out that the fallacy centers in proposition 4 and not in proposition 15. The only advantage gained by introducing proposition 15 is that it aids in bringing out a fallacy that has been committed by Aristotelians thousands of times in inferring proposition 5 from proposition 1 on purely formal grounds. Moreover, the slightest consideration of other examples shows that we do not imply the contradiction of a proposition having the form of proposition 15 when we assert a proposition having the form of proposition 1. Consider the following propositions:

1
Cert
whic
an A
ever
ing
that
other
thele
tions
totel
to th
unac
escap
totel
be b
secon

By
four
our
amb
whic
whic
totel
circl
univ
tion
is e
nega
from
side

1'. All organic systems are mechanical systems.

15'. All non-organic systems are mechanical systems.

Certainly there is no implicit rule in Aristotelian logic which would necessitate the rejection of proposition 15' as an Aristotelian proposition. Furthermore no one would ever assert that the affirmation of the statement that living organisms are mechanical systems would necessitate that one deny the statement that stones and planets and other inorganic systems are mechanical systems. Nevertheless it can be shown that by applying to these propositions no other rules than those in good standing in Aristotelian logic, they become contradictory. No statement to the effect that we have introduced in proposition 15 an unacceptable Aristotelian proposition will enable one to escape the conclusion that the existing principles of Aristotelian logic permit one to prove that a proposition can be both consistent with and the contradictory of a given second proposition.

THE CAUSE OF THE INCONSISTENCY

By the use of the graphical symbolism we can keep all four propositions which we have used in our proof before our attention at once and also escape any possibility of ambiguity in our interpretation of them. In the graphs which follow, the intersecting circles represent two classes which correspond to the subject and predicate of the Aristotelian proposition. (See figures 1 and 2). These circles are placed within a square which represents the universe of discourse or the largest class under consideration in the propositions in question. The use of the square is essential in the treatment of propositions involving negatives such as the propositions which we have selected from Jevons' list, since the negatives refer to the region outside the circles. This symbolism enables us to designate,

in a way that the mind can immediately grasp, the possible

ARISTOTELIAN

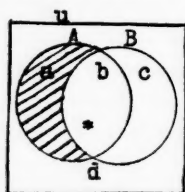


Fig. 1.*

BOOLEAN

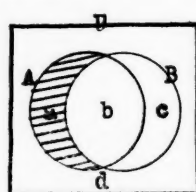


Fig. 2.

subclasses resulting from the relation of two terms or classes to form a proposition. The number of sub-classes resulting will always be two to the n th power where n represents the number of classes related. Thus, in the traditional Aristotelian proposition the joining of the subject and the predicate by the copula is represented, according to our rule, by the intersection of two circles which give rise to two times two, or four, sub-classes. These sub-classes are designated in the accompanying graphs (Fig. 1, ff.) by the letters a, b, c, and d. The difference between the four types of propositions will be indicated on the graphs by signs in the sub-sections to which the propositions in question refer. Any proposition makes some statement about certain of these sub-classes. This statement will assert with reference to any sub-class to which it refers, either that this sub-class has one or more members or that it is empty. The assertion of emptiness will be designated graphically by shading the sub-section in question; the assertion of the presence of members by a star. The absence from any sub-class of either a shading or a star indicates that the proposition says nothing about it, and thus indicates that a second proposition affirming something of said sub-section cannot be inferred from the proposition in

* I am indebted to Professor H. M. Sheffer for this method of graphing propositions.

question. If two propositions contradict each other they will necessitate the placing of opposite signs in the same sub-section; that is, one will affirm that the sub-section has members while the other affirms that it is empty. If two propositions co-imply each other they will say the same thing about every sub-section. If one proposition implies a second proposition but the second does not imply the first, the first will assert about every section, everything that is asserted by the second and in addition something about one or more sections which is not asserted by the second.

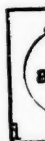
When one indicates graphically the logical meaning of a proposition of the form "All A are B" one finds that there are two possible meanings which this statement may take. We may call them the "wider" versus the "narrower", or the "Aristotelian" versus the "Boolean" respectively. The wider Aristotelian meaning is "All A are B and there are A's." It asserts not merely that there are no A's outside of B but also that there are A's. Represented graphically this means that sub-section a is empty and that sub-section b has members. (See Figure 1 in which a is shaded and b contains a star.) This is the meaning which the universal proposition in Aristotelian logic is always supposed to take. This fact is expressed in the text-books by the statement, "The universal proposition always implies existence." In terms of the logic of classes it means that Aristotelian logic does not work with the notion of the "empty class."

The other, narrower Boolean interpretation of the A proposition is "All A are B and there may or may not be A's." It asserts that sub-section a has no members but says nothing about sub-section b. (Figure 2.) The merit of this interpretation used in the logic of classes is two-fold. Firstly, when a proposition is found to be subject to

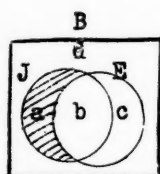
two interpretations one escapes all danger of fallacy and gains in generality by taking the minimum meaning as fundamental. When the maximal meaning is used an additional clause can be added. If one takes the maximal meaning as fundamental and never analyzes below it, one's system is cut off from the possibility of handling propositions of the minimum type. Secondly, the notion of the minimum class is as sound a notion as that of a class with members. In fact it is essential, as this analysis will prove, if one's logic is to apply not merely to inferences in mathematics but even to the ordinary inferences treated in the classical text-books on Aristotelian logic.

If we are clear concerning the difference between the interpretation of the universal proposition in the logic of classes and in the logic of propositions of Aristotle, we are prepared to proceed to an analysis of the problem which confronts us.

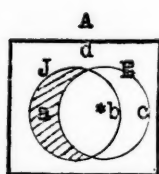
The graphs which follow give both interpretations for each of the four propositions concerning just and expedient acts which we have selected for consideration. The Boolean interpretation is designated by the letter B following the number of the proposition in question, the Aristotelian by the letter A. The B interpretations are given in the left, the A in the right column of graphs. Since our aim is to determine the relation of propositions 4, 5 and 15 to proposition 1, all propositions are graphed in terms of the class "just acts" and the class "expedient acts" referred to in proposition 1 and not in terms of the negates referred to in the other propositions. This is indicated on the graphs by the fact that the two intersecting circles in each graph are marked by the letters J and E standing for the class of "just acts" and the class of "expedient acts" respectively.



gin
osi
inc
dis
tic
do
th
ila
th
di
un
p



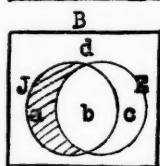
1



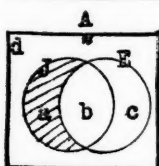
1 All just acts are expedient and—

B—there may or may not be just acts.

A—there are just acts.



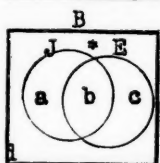
4



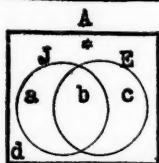
4 All inexpedient acts are unjust and—

B—there may or may not be inexpedient acts.

A—there are inexpedient acts.



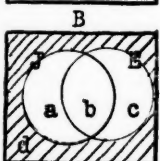
5



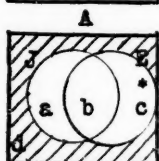
5 Some unjust acts are inexpedient and—

B—there are unjust acts.

A—there are unjust acts.



15



15 All unjust acts are expedient and—

B—there may or may not be unjust acts.

A—there are unjust acts.

Consider with reference to these graphs the proof beginning on page 3 of this article with the statement, "Propositions 1 and 15 are consistent. The graphs 1A and 15A indicate this to be valid since both propositions refer to different sections. Proposition 1A affirms merely that section a is empty and that b has members and, therefore, does not contradict the affirmation of proposition 15A to the effect that d is empty and that c has members. A similar consideration of graphs 1B and 15B will indicate also that these propositions are consistent. (Rules for contradiction, page 6 of this article). Hence, it follows that under either interpretation of this article the universal proposition, propositions 1 and 15 are consistent.

Certain interesting facts appear when we trace, by means of the graphs, the argument, valid according to Aristotelian rules, that these two propositions are contradictory. Consider the first step of the argument which we summarized in the statement, "Proposition 1 implies proposition 4." According to the rule of conversion by contraposition these two propositions (1 and 4) co-imply each other. But under which interpretation of the A proposition does this rule of conversion by contraposition hold? The graphs indicate that it is only for the Boolean interpretation since it is only in graphs 1B and 4B that the same sub-sections (in this instance the sub-section a) are referred to in the same way. Proposition 4A can never be inferred from proposition 1A since 4A asserts that section d has members whereas 1A asserts nothing with reference to section d. It follows therefore that the only circumstance under which these two universal affirmative propositions can be said to co-imply each other is when both take the narrower Boolean meaning. Consequently, every time that the Aristotelian logician has used the rule of conversion by contraposition to infer a proposition of the form of 4 from another of the form of 1 he has denied his fundamental principle that the A proposition always implies existence when used in Aristotelian logic. It is evident therefore that when we assert, according to the rule of conversion by contraposition, that proposition 1 implies proposition 4 we mean that it implies the proposition "All inexpedient acts are unjust and there may or may not be inexpedient acts;" we are asserting that section a is empty and not that section d has members. This remains true even if proposition 1 is interpreted in its wider meaning, as a consideration of graphs 1A, 4B and 4A will indicate.

A consideration of the second step in the argument to the conclusion that propositions 1 and 15 are contradictory,

raise
prop
that
4A
eithe
that
Aris
Sinc
prop
ferr
conv
"Al
"So
tion
acts

rule
of i
to t
log
is u
ste
ver
5 h
Mo
ste
me
the
dif
pr
pr
sit
tic
pu

raises the question concerning which interpretation of proposition 4 we, of necessity, presuppose when we assert that proposition 4 implies proposition 5. The graphs 4B, 4A and 5A indicate very clearly, since proposition 5 on either interpretation asserts section d to have members, that proposition 5 can be inferred only from the wider Aristotelian meaning of proposition 4, given in graph 4A. Since 4B asserts nothing about section d it follows that proposition 5 which refers only to section d cannot be inferred from it. Therefore, when by appeal to the rule of conversion by limitation we affirm that the proposition (4) "All inexpedient acts are unjust" implies proposition (5) "Some unjust acts are inexpedient," we mean by proposition 4 the unambiguous proposition (4A) "All inexpedient acts are unjust and there are inexpedient acts."

A fallacy in Aristotelian logic due to the use of the rule of conversion by contraposition along with other rules of immediate inference is now before us. When by appeal to the rule of conversion by contraposition the Aristotelian logician asserts that proposition 1 implies proposition 4 he is using proposition 4 in one sense, and when in the next step of his argument he asserts by appeal to the rule of conversion by limitation that proposition 4 implies proposition 5 he is using proposition 4 in an entirely different sense. Moreover the meaning of proposition 4 used in the second step of the argument cannot be inferred from the narrower meaning of the proposition used in the first step. Since the proposition which implies proposition 5 is an entirely different one from the proposition which is implied by proposition 1, and cannot be inferred from this different proposition, the conclusion that proposition 1 implies proposition 5 is invalid. By neither interpretation of propositions can proposition 5 be inferred from proposition 1 on purely formal grounds. Throughout history logicians who

have combined the rule of conversion by contraposition with the rule of conversion by limitation to assert that since proposition 1 implies proposition 4 and 4 implies 5, therefore the proposition (1) "All just acts are expedient acts" implies the proposition (5) "Some unjust acts are inexpedient" have been guilty of the fallacy of "four terms" or "ambiguous middle," since proposition 4 which is the middle term in this syllogistic inference is used in two different senses.

Since the proposition 4 which implies and is implied by proposition 1 does not imply the proposition 5 which contradicts proposition 15, it follows that proposition 1 contradicts proposition 15 by no valid rules of inference.

Thus the cause of the inconsistency in Aristotelian logic is revealed. By no process of valid inference can proposition 1 imply the falsity of proposition 15. It does so in Aristotelian logic because the method of conversion by contraposition is inconsistent with that logic as the meaning of existence is usually defined in that science.

Aristotelian logic can remove the contradiction and escape the situation in which its rules brand as valid an inference which is obviously false, by admitting within its science the use of the minimum meaning of the universal proposition. Once this happens it ceases to be Aristotelian in character. The rule that the universal proposition always implies a particular will no longer hold. Neither will certain "valid" moods of the syllogism continue to be valid. The notion of the empty class will be admitted for it is involved in the minimum meaning of the universal proposition. In short, one will have a theory of propositions which is that of the logic of classes.

The cause of the internal inconsistency in Aristotelian logic is *evident*. There is an inescapable ambiguity in the universal proposition due to the fact that its minimum

mean
positi
mal r
feren
betwe
neces
herec
is, ho
scien
ing
meth
ing
indiv
merc
twee
the
vers
is in
whic
by t
whic
that
is b
exis
to t
ver
uni
Th
of
the
len

meaning is used in the method of conversion by contraposition while in the same syllogistic inference its maximal meaning appears in other methods of immediate inference without any attempt being made to distinguish between the two meanings. This distinction would be unnecessary were the fundamental principle of the logic adhered to in the operations in use in the science. The point is, however, that Aristotelians can succeed in making their science suffice, even for the ordinary propositions appearing in the classical textbooks, only by introducing the method of conversion by contraposition and thereby denying their fundamental thesis concerning the existence of individuals. Thus the cause of the inconsistency is not merely that Aristotelians have failed to distinguish between the two meanings of the A proposition but also that the founders of the science admitted in the rule of conversion by contraposition a method of inference that is in direct opposition to the fundamental principle upon which their science rests. The state of affairs illustrated by the propositions concerning just and expedient acts in which equally acceptable rules of the traditional logic prove that two propositions are both consistent and contradictory, is but an instance of the more fundamental contradiction existing at the very foundation of Aristotelian logic due to the fact that this science retains the principle of conversion by contraposition along with the principle that the universal proposition always implies existence.

THE RELATION OF ARISTOTELIAN LOGIC TO THE LOGIC OF CLASSES

It has been thought that the greater range of the logic of classes is of little use to any except those interested in the abstract concepts of mathematics, and that for all problems coming within the range of ordinary experience the

Aristotelian science with its principle that the universal implies existence, suffices. It is evident, however, that this contention cannot be maintained. Certainly the method of conversion by contraposition applies to propositions and inferences used in the most ordinary experiences of the average man. Since this method presupposes the narrower meaning of the universal proposition it follows that the notion of the empty class which is taken as fundamental in the logic of classes is as necessary to account for the simple inferences of the traditional textbooks as it is to include the inferences in mathematics. If Aristotelian logic is to deal without fallacy and internal contradiction with even the simplest problems which it has attempted to treat in the past it must reject its theory of the universal proposition.

This means that it must replace its fourfold division of propositions into the A, E, I, and O types by at least² a six-fold division into I, O and four other types representing the wider and narrower meanings of both A and E. This is to reduce or transform Aristotelian logic into the logic of classes, for the latter science rests upon this six-fold division, except that by an additional piece of analysis it has succeeded in reducing these six to two elemental types and has thereby gained a simple consistent logical system which includes in their proper relations the method of the syllogism, the method of conversion by contraposition, and the other methods of immediate inference, and nevertheless operates according to rules more simple and workable than those of the less powerful Aristotelian system.

This internal inconsistency could be escaped by Aristotelians were it possible for them to follow in practice the theory of propositions given by W. E. Johnson in his exposition of the traditional theory of immediate inference. He

²W. E. Johnson has worked out an eightfold division in which the distinction between the maximal and minimal meanings applies to the particulars as well as to the universals. *Logic*, Vol. I, Ch. IX.

says, "The conversions authorized on the traditional scheme derive their validity from the assumption that there are instances not only of p , but also of q and of non- p and of non- q"³ In other words, the universal proposition in immediate inference in Aristotelian logic is always assumed to imply (in terms of our graphs) not only that section a is empty and b has members but also that sections c and d have members.

There is no doubt that if the rules of immediate inference were used with these presuppositions there would be no internal contradiction. The difficulty with this interpretation is that Aristotelians have never used the universal propositions in this way when they converted, nor can they if they desire to have their logic deal with the propositions of the traditional textbooks. No textbook in Aristotelian logic, to the writer's knowledge, ever informed the student that the rules of immediate inference did not apply to all A propositions but only to those asserting that sub-sections c and d as well as b have members. Furthermore, such an interpretation as Johnson gives would rule out, as invalid Aristotelian propositions, a large number of propositions in the traditional textbooks. Take, for example, the proposition "All metals are elements," used by Jevons in his *Lessons in Logic* in illustrating the method of conversion by contraposition. This proposition would be an invalid Aristotelian proposition on the above interpretation, since the class d including things which are non-metals and non-elements is, or at least may be, empty in the discourse in question. Furthermore, such an interpretation of the universal proposition would make immediate inference from it unnecessary. One would know so much when one asserted a universal that methods of inference enabling one to determine what it implies would

³*Logic*, Vol. 1, p. 139.

be entirely gratuitous. Moreover this is an entirely unjustified limitation of the method of contraposition. As the 1B and 4B graphs on page 8 of this article indicate, the method is valid when no such extensive knowledge of existence is presupposed in asserting an A proposition. This interpretation offers no means of escape from the inconsistency which we have indicated.

Aristotelians could remove the inconsistency by rejecting the method of conversion by contraposition. When one remembers, however, that this method is a deduction from the other methods of conversion and that its removal would carry with it, therefore, the removal of these other methods, this solution ceases to appeal to one as satisfactory. Moreover, such a procedure would make the science even less powerful, with reference to the range of problems which it treats, than the traditional system. There seems, therefore, to be no alternative but to reject the principle that the wider meaning of the universal is the only one admissible in Aristotelian logic and to accept the theory of propositions of the logic of classes or of one of the systems which have generalized beyond the logic of classes.

Nothing would be lost in this change except the inconsistency which we have indicated. All the valid notions of the Aristotelian science would follow as derivatives from the more fundamental concepts and principles of the new science. Only one point needs to be kept before us as a warning. We must not commit the error of thinking that, because the valid Aristotelian notions are derivatives, they are therefore insignificant. We must not forget that the principles of grammar, a considerable number of the fundamental concepts of ordinary conversation, of philosophy, and of natural science are to be understood in terms of the fundamental categories and principles of Aristotelian logic. There would be a tremendous loss in understanding were

men o
The t
ment
mathe
of na
cende
the hi
exper
gard
a con
nativ
cal th
terms
Arist
hand
the p
cance
we m
is an
es.
Aris
with
there
powe
wher
their
T
trad
to v
Som
siste
mak
has
The

men of the future to be trained in ignorance of this fact. The theory of relativity in natural science makes this comment especially pointed. Because of Einstein's analysis, mathematical theories of nature based upon a description of nature in terms of the logic of relations are in the ascendancy. It is important to remember, however, that in the history of science and also in the minds of contemporary experimental physicists and chemists who hesitate to regard electrons and other objects as characteristics either of a continuum or of a system of relations, there is an alternative theory of nature known as the physical or mechanical theory which is based upon a description of nature in terms of the subject-predicate categories of the logic of Aristotle. Although the modern logic is indispensable in handling the mathematical theories and in no way excludes the physical or mechanical theory, the historical significance of the two-termed logic may be overlooked unless we make it a point to indicate that the Aristotelian science is an especially important derivative from the logic of classes. For this reason it seems wise to continue to teach the Aristotelian science at least sufficiently to acquaint men with its fundamental concepts and operations, although there is no alternative but to teach the consistent and more powerful logic of classes, which includes its valid elements, when we provide men with the most serviceable logic for their practical use.

There is no doubt that the historical significance of the traditional logic has caused certain logicians to hesitate to welcome wholeheartedly the modern logical systems. Some are inclined to the supposition that the gain in consistency and power which the new science gives will not make up for the significance which the Aristotelian system has by virtue of the single fact that it is ancient in origin. They regret to watch a science pass into a secondary posi-

tion which over a period of twenty-three centuries has ingrained itself into the very fibre of the thought of our civilization. What they forget, however, is that the so-called modern logic is modern only to logicians and that, so far as its fundamental concepts are concerned, it dates back to Aristotle and even to the centuries previous to Aristotle, when at least certain of its fundamental notions were first discovered in founding the science of mathematics. It also, throughout the centuries, has plowed its way into the very body of our thought and into every phase of our daily life. Analyze an equation in physics, fathom a proof in mathematics, search to their sources the problems of philosophy, or consider even the statement of your grocer when he orders his boy to bring any packet of sugar from the shelf and you will find it present. Certainly, if the desire for an understanding of the thought and language of our age indicates the necessity of an acquaintance with the concepts and logic of Aristotle, it indicates to an equal or even greater degree the necessity that we master the fundamental concepts of mathematical logic. If there is any occasion in the present situation for regret it is that these primitive ideas have not been placed at our disposal before.

F. S. C. NORTHROP.

YALE UNIVERSITY.

LANGUAGE AND THOUGHT

IT is an evident fact, and by no means a newly discovered one, that talking and thinking are closely related. If we go no further back than Hobbes we find the statement that "words are wise men's counters," that truth consists in the right ordering of names in our affirmations, that so-called universal ideas are but names of many particular things, and that words serve an important function as marks or notes of remembrance for thoughts. (*Leviathan*, Everyman's edition, pp. 13-16.) Hobbes even goes so far as to say that departure from ignorance to either wisdom or error is possible only through the use of words. (*Ibid.*, pp. 15-16.) During the latter part of the last century a vigorous and extensive controversy was waged, in the center of which was Max Müller with the contention registered on the title page of his *Science of Thought*—"No reason without language, no language without reason." This contention was an attempt to clarify the relation between thought and language; but it, like Hobbes' statements, assumed the existence of two separate, though correlated, factors.

More recently attempts have been made to analyze the relation between thought and language by regarding thought as a product of language or by identifying thought, in whole or in part, with language. The significance of such attempts, as well as the significance of criticisms of them, is made difficult of estimation because of the fact that

various conceptions both of thought and of language have been used. A separation and determination of the facts to be explained by the categories of thought and language seem to constitute the first step in the solution of the problem of the relation between thinking and talking.

At least four general groups of facts may be distinguished. The first three of these groups may be designated as follows: the process by which conduct or actions are modified by experience and habits are formed, the ability which men have to talk about, or think about, or refer to, absent objects, and the experience of awareness, or consciousness, or self-consciousness. The fourth group, which more or less intersects all the groups mentioned above, may be designated by saying that it consists of the facts which lead us to speak of integration or organization in conduct and of inference or logic in thought.

It is undoubtedly a fact that human beings change their reactions and build up systems of responses. In recent years a number of writers have given an account of the process of learning or adjustment in terms of the principle of the conditioned reflex or response. As stated by Bertrand Russell (*The Analysis of Mind*, pp. 86 ff.), this principle is that: "If a complex stimulus A has caused a complex reaction B in an organism, the occurrence of a part of A on a future occasion tends to cause the whole reaction B." It seems probable that a large part of the behavior of an individual can be intelligently related to his history in terms of such a description of the way in which conduct is modified. At least this description seems to be the most general one of human behavior that can be given, whether or not it has to be supplemented at various points. If we regard thinking as identical with the general process by which behavior is modified, then clearly thinking is by no

mea
gua

the
ing
gua
cor
hab
neu
mer
wh
ger
hab
ass
abl
ciat
wit
hab
exc
cas
tha
sub
har
spo

gua
its,
gar
sim
for
or
gua

ist
(19

means identical with the use of language but includes language as a particular kind of behavior.

We may, however, accept this general description of the process by which behavior is modified but identify thinking with language behavior and proceed to describe language behavior. This gives us Watson's position. According to Watson,¹ the anatomical basis of language habits involves the whole body but specifically the neuro-muscular system in the head, neck and chest segments. The mere sounding of words is vocal habit; but when words are connected up with other vocal action and general bodily action we have language habit. Vocal habits do not become language habits until they become associated with arm, hand and leg activities and substitutable for them. Language habits are vocal habits plus associative connection of the word with bodily habits connected with the object for which the word stands; and early word habits are formed in the same way as other explicit habits except that imitation seems to be added to the process in the case of vocal acts. It is not necessary to assume, however, that all thought is vocal, as other actions come to be stimuli substitutable for the object seen, drawn, written or handled. Man's verbal responses are similar to the responses of a rat in a maze.

According to this way of dealing with language, language habits are built up in the same fashion as other habits, function as stimuli in the same fashion that other organic or extra-organic events function, and are important simply because they are at the same time responses called forth by needs and stimuli calling out responses originally or previously called out by the situations in which the language habits formed.²

¹*Psychology from the Standpoint of a Behaviorist*, 2nd edition, Chapter IX.

²A similar account of thinking may be found in "A Physiological-Behaviorist Description of Thinking," J. F. Dashiell, *Psy. Review*, Vol. 32, pp. 54 ff. (1925).

If instead of asking whether the above account of language adequately describes thinking we ask whether the above account of language and of the process by which conduct is modified adequately describes human behavior, it seems probable (though not every one would agree) that our answer would be conditioned by the extent to which we can abstract the facts included under modification of behavior from the facts designated by the terms "reference to absent objects," "consciousness," and "logical organization of conduct." There is much reason to believe (though no brief for this contention can be presented here) that for many purposes, over large ranges of human conduct, modification of behavior can be abstracted from the other facts mentioned and described in terms of complications of stimuli and responses by redintegration or the conditioning of responses.

The problem becomes more complex when we attempt to consider the relation of language to absent objects or events. According to Dewey³ identification of knowing and thinking with speech is in the right direction but theories along this line—except that of Professor Mead—have over-simplified. When it is asserted that thought is a speech reaction, if it is said that the stimulus of the reaction is a sensibly present thing, then we presuppose an object of knowledge; if the stimulus is a prior reaction which causes contraction of the vocal organs, then we have, not knowledge, but the action of a talking machine. To say that the speech reaction is adaptive does not suffice, since a sigh caused by organic conditions may be adaptive but is not thought. "There must be a defective or hesitant connection between seeing and handling which is somehow made good and whole by speech." Not every speech reaction is a cognitive statement. A judgment has to

³"Knowledge and Speech Reaction," *Jour. of Phil.*, Vol. 19, pp. 561 ff. (1922).

be a reaction not merely to an object as a provocative cause, but has to be a response which somehow fits into or answers to the object as stimulus. "The statement "this is a knife" is cognitive because it is more than a mere evocation of a prior piece of behavior. It serves to supplement or complete behavior which is incomplete or broken without it." Speech reaction "integrates or coordinates behavior tendencies which without it are uncertain and more or less antagonistic." The object of judgment is thus not the cause simply; it is the consequence, the modification effected in its cause by the speech reaction. This is still over-simplified: "A speech reaction is the innervation-of-vocal-apparatus-as-stimulus-to-the-responses-of-other-organs-through-the-auditory-apparatus. It involves the auditor and his characteristic reaction to speech heard."

While Professor Dewey's argument involves the factor of integration in conduct, it seems evident that the essential import of it is the contention that in some speech reactions the stimulus is not merely the present object or situation but the still unattained modification of the object or situation. It is not sufficient that the language response shall as a matter of fact initiate a response that will modify the situation acting as a stimulus to the language response. In such case the language response would be merely adaptive. The language response must include in itself reference to the fact that it will be responded to by other organs in such a way as to modify the stimulation situation. In other words, the language response involves reference to absent consequences. In *Experience and Nature* Professor Dewey states this contention in slightly different form: Signaling reflexes of animals present the basic material but not the sufficient condition of language. The essential peculiarity of language is that the speaker puts himself at the standpoint in which two parties share (pp. 176 ff.). In

communication "B's understanding of the meaning of what A says, instead of being a mere reaction to sound, is an anticipation of a consequence, while it is also an immediate activity of eyes, legs, and hands in getting and giving the flower to A" (p. 181). While Professor Dewey here puts anticipation of consequences in terms of the individual's putting himself in the place of another, it seems that this latter process is merely a particular case, and apparently not a peculiar case, of anticipation of consequences. It may be that anticipation of the responses of other people is temporally the earliest form of anticipation; but it is not apparent from Professor Dewey's argument that anticipation of consequences is to be explained in terms of communication between individuals. On the contrary, communication is made possible by the logically prior process of anticipation.

In Professor Mead's more extended analysis of communication, vocal gestures, with the connected activities which make them significant symbols, are made the basis of anticipation or transcendental reference. Professor Mead takes as his problem the complex act involving the cooperating activities of a number of individuals.⁴ Among the invertebrates the mediation of complex conduct is found in the physiological differentiation of the individuals, and "there is no convincing evidence that an ant or a bee is obliged to anticipate the act of another ant or bee - - - in order that it may integrate its activity into the common act." Among men, however, we find a process by which a social object answering to the responses of different individuals in a society can exist in the experience of each individual of the society. This process is carried on by the individuals responding to situations with

⁴Cf. esp. "The Genesis of the Self and Social Control," *Inter. Jour. of Ethics*, Vol. 35, pp. 251 ff. (1925); also "A Behavioristic Account of the Significant Symbol," *Jour. of Phil.*, Vol. 19, pp. 158 ff.

vocal
individu
first
one i
in th
they
of ot
such
other
temp
mak
tive
C
that
subs
not
vidu
not
but
atta
wor
ject

whe
hyp
ence
ull.
obje
app
ind
doe
plic
diti
obj

vocal gestures which initiate certain responses in other individuals and at the same time initiate tendencies in the first individual to respond in the same fashion. That is, one individual anticipates the responses of other individuals in that he himself responds implicitly or in tendency as they are going to respond. Since he contains the responses of other individuals in himself, he can adjust his actions to such responses before they have been actually made by the other individuals. The whole cooperative act exists spatio-temporally in the responses of each individual before he makes the response that is his contribution to the cooperative act.

One significant aspect of Professor Mead's theory is that it removes anticipation of absent consequences and substitutes response to present attitudes which may or may not be counterparts of the future attitudes of other individuals. That they will be counterparts is guaranteed not by any anticipative reference to the future attitudes but by the past activities in which various individuals have attached similar responses to the same stimulus. In other words, the anticipative reference of thought to absent objects is described in terms of present language responses.

Another question is raised, however, when we consider whether or not the machinery which Professor Mead hypothesizes is the simplest which will describe the reference to absent objects in terms of responses to present stimuli. It seems obvious that if we mean by anticipation of objects present action which is adaptive to an absent but approaching object,—adaptive in the sense of putting the individual in a position to respond to the object when it does arrive,—Professor Mead's machinery is more complicated than is necessary. By the principle of the conditioned response the sight of an object, the handling of an object, and a verbal response may be so arranged that the

sight of the object may be a stimulus to the individual to make the verbal response, which in turn will stimulate the individual to initiate responses previously initiated by the handling of the object. In other words, one aspect of a situation extended in time and space may serve as a stimulus to initiate the response previously initiated by the entire situation. In such a case, if the aspect responded to is temporally earlier than the other aspects of the situation, the response of the individual will be an anticipation of the later aspects of the situation.

This may be brought out in another way by an analysis of Professor Mead's conception of social action. According to Professor Mead, as above explained, the cooperative reaction is made possible by the fact that all the individuals react to a common social object. This social object is made up of the response tendencies in each individual corresponding to the total responses of all the individuals participating in the cooperative act. But since the overt responses of the various individuals are complementary rather than identical, the response tendencies serving as stimulus to each individual initiate different responses in different individuals. The supposition that there is a common stimulus does not therefore explain the cooperation. We must in addition show how in each individual the common stimulus initiates the individual response that will fit into the responses of the other individuals. In other words, the presence in each individual of response tendencies corresponding to the total act does not explain the cooperation, and you have the same problem that you would have if you assumed merely that the overt activity of each individual is initiated by the same vocal gesture or by the same external situation. In either case the important thing is not the character of the stimulus but the fact that in different individuals complementary responses have been attached

to the
opera
as th
pond
individu
ter.
respo
act d
neces
for c
tiation
tend
stan
Y
for
tion
theo
othe
A s
ticip
the
may
say
to r
we
will
the
beh
go,
stin
fun
for
not
ing

to the same stimulus. If this be so, then the stimulus to cooperative behavior may as well be the bare vocal gesture as the vocal gesture initiating response tendencies corresponding to the total cooperative act. Whether or not the individual will understand what he is doing is another matter. What we have said does not prove, of course, that response tendencies corresponding to the total cooperative act do not serve as stimuli. It intends to show that it is not necessary to assume such response tendencies to account for cooperative action, even when physiological differentiation is absent. Later we shall ask whether such response tendencies are equivalent to conscious reference or understanding of what is going on.

While Professor Mead's theory is not without provision for application to anticipation of events other than the actions of other individuals, it is in such application that the theory seems least plausible. Clearly we anticipate events other than those made up of actions of other individuals. A skilled mechanic working on a complicated engine anticipates the effects of his labor on the engine, or anticipates the responses of the engine to his actions. However we may describe this or explain it, it would seem farfetched to say that the mechanic is sufficiently accomplished to be able to respond implicitly as the engine will respond. Perhaps we may say that in the present he tends to respond as he will respond overtly to the later action of the engine. For the purposes, however, of describing the bare fact that the behavior of the mechanic is suitable to making the engine go, it is necessary only to describe the fashion in which the stimuli which the engine presents have become stimulation functions. This does not exhaust the problem, however, for the behavior of the mechanic is, to use Dewey's phrase, not merely adaptive. The mechanic knows what he is trying to do.

This brings us to the third type of facts, the facts designated by consciousness or self-consciousness. Before we consider them we may say, on the basis of Professor Mead's theory and our criticism of it but still rather dogmatically, that thought as adaptation to absent objects may be described in terms of language responses and the principle of the conditioned response by which behavior is modified. The problem with which both Professor Dewey and Professor Mead are primarily concerned is not anticipation in the sense of adaptation but anticipation in the sense of consciousness of what one is doing.

Perhaps the chief criticism of the theory that language and thought are identical has been directed at Watson's doctrine that vocal habits become language habits when they become connected with arm and body movements and *substitutable* for them. In the symposium of the *British Journal of Psychology* ("Is Thinking Merely the Action of Language Mechanisms?": I. F. C. Bartlett and E. M. Smith, II. Godfrey H. Thompson, III. T. H. Pear, IV. Arthur Robinson, V. John B. Watson, Vol. XI, pp. 55-104, 1920-1921) this point recurs again and again. It is pointed out that mere replacement of one set of movements by another is not enough to constitute a language habit, that any series of responses arranged in a fairly definite order constitute a series of signs, and that such a series, even if vocal, is not necessarily thinking. Another writer remarks that the awareness of meaning remains an unsolved problem. Still another contends that there is nothing in the nature of a laryngeal response which can possibly label it as a substitute for a response of the larger musculature except order in time and frequency of accompaniment, and that the insufficiency of these criteria is apparent. The substance of Eaton's criticism of Watson involves much the same contention. He argues that it is impossible without

intro
ject
that
the f
bols,
if th
awa
capa
rath
we s
and
sum
p. 2
ism
and
with
imp
com
cou
to g
self
pro
a c
ter
spo
len
org
ces
the
ma
the
fer

introspection to tell when a sign is substituted for an object, that substitution takes place in internal experience, and that thinking is the substitution of symbols, which are in the field of presentation, for the things intended by the symbols, which may be beyond this field. He goes on to say that if thought is behavior, it is behavior inhibited and yet fully aware of its directions and intentions, and that unless this capacity to suspend reactions and to anticipate an object rather than to behave as if it were present were developed, we should not be able to think but only to act (*Symbolism and Truth*, pp. 27-29). To solve the difficulty Eaton assumes the existence of a unique meaning activity (*Ibid.*, p. 23).

Not only the critics but also the supporters of behaviorism regard this point as crucial. Both Professor Dewey and Professor Mead go a long way in identifying thought with language, but as has been hinted above they are so impressed with the problem of how a vocal response becomes a significant symbol that they orient their entire accounts around this problem. Hunter, also, in his attempt to give a physiological solution of this problem shows himself to be conscious of it. He contends⁵ that a symbolic process is a substitute process of a certain kind and of a certain stage of development. Substitution is defined in terms of the conditioned reflex, when two or more responses are associated; but a language response is equivalent to a substitute process which can be reinstated by an organism *only* when associative traces of the original process persist in the integration. It is clear that these hypothetical associative traces are put in so that the organism may in some fashion have in his possession at the same time the substitute and the substitute, in order that he may refer to the substitute through the substitute.

⁵"The Symbolic Process," *Psy. Rev.*, Vo. 31, pp. 478-497, 1924.

The problem of defining the relation of substitution is not a problem that arises in connection with the observable behavior of other individuals. Or rather, in this field it is not difficult to define the relation of substitution, since it is defined in terms of the transfer of a response from a complex situation to a part of that situation. Nor is it probable that it can be solved in terms of observable behavior. Thus Hunter's associative traces (which are certainly not observed but which nevertheless are supposed to lie in the field of the potentially observable) do not constitute conscious meaning or conscious reference. Professor Mead's theory, while much more plausible, suffers from a similar defect. The machinery which it describes seems more complicated than is necessary to account for the vocal gesture becoming a significant symbol in the sense of being a stimulus to cooperative action. On the other hand, it is not sufficiently complicated to explain how a symbol becomes significant in the sense of being a carrier of conscious meaning. Or rather, one feels that after the addition of implicit responses or response tendencies, one may still ask the question: But haven't you omitted consciousness or understanding of what is going on?

In approaching the problem of substitution and consciousness, the first step is to notice that there is considerable evidence to indicate that the problem of defining substitution may also fail to appear in the conscious field. Titchener's analysis of consciousness fails to disclose consciousness of meaning and puts meaning in context, outside of the field investigated by psychology. The arguments of the imageless thought school of psychologists purport to show primarily that thinking goes on when no conscious correlate of it can be found. This may be illustrated by the doctrine of the *Aufgabe*. To give a simple illustration, it was found that if subjects were shown a

num
hav
sho
in r
sha
was
scie
Au
but
wh
and
the
cis
up
Fo
ba
spe
of
me
tex
sid
an
ma
tif

tr
or
of
re
be
id
T
fie
of

number of colored blocks of various shapes and colors, after having been told to try to remember what colors were shown them, they remembered the colors but were vague in regard to the shapes. Conversely, if told to notice the shapes, they were vague about the colors. In neither case was the direction to notice shapes or colors present in consciousness while the blocks were being presented. The Aufgabe determined their perceptions, or their responses, but was not present in consciousness. In the same way, when we are thinking of a house, we do not have the house and a symbol in consciousness and consciously substitute the symbol for the house. If this be true, then the criticisms of the behavioristic account of substitution are based upon something other than a consciousness of substitution. For our purposes, the facts upon which these criticisms are based may be divided into the facts designated when we speak of awareness and those designated when we speak of organization or integration in behavior. The kind of meaning dealt with by the structuralists' concept of context and the Würzburg concept of the Aufgabe may be considered as involving primarily the problem of integration and organization in conduct or in experience, while the remaining facts designated by the term meaning may be identified with consciousness in the sense of awareness.

To summarize, the criticisms directed at Watson's doctrine that language habits are vocal habits substitutable for other muscular activity indicate a real difficulty in the way of the identification of language and thinking; but there is reason to believe (though arguments on the other side could be found) that the difficulty is not how either language or ideas can be known to be substitutes for symbolized objects. This problem does not arise either in a description of the field of observable behavior or in a description of the field of consciousness. The real difficulty is two-fold: the iden-

tification of language with thinking seems to neglect the organization or order usually regarded as characteristic of thought, and also our awareness of what is going on.

We may conveniently consider first the problem of order or organization. It will be remembered that Watson contended that the action of language habits is the random activity that a rat manifests in learning a maze. We have noticed already the conception of the *Aufgabe* which designates an experimentally observed organization of responses to colored blocks. The difference between logical memory and rote memory, the memorization of logically connected terms and the memorization of nonsense syllables, has long been recognized. Much the same problem is found in the solution of problems of various kinds, where the fumbling and success method of solution is contrasted with a "rational" or apparently more direct method. Thus Köhler's experiments with apes seem to show two types of solution, random fumbling and a solution in which the animal proceeds by a single continuous course to the solution of the problem, despite the fact that the behavior involved is different from the habitual behavior of the animal.⁶ In the same group with the facts mentioned above are those that may be conveniently designated by the term "deductive logic." However sure the pragmatists may be that the test of theories is their working in actual practice, they have never been able to get away from the fact that theory does outrun practice. In such disciplines as mathematics language reactions that indeed were habits are rubbed together and the result is a long array of logically determinel language reactions that are not habits. Combinations of patterns of language reactions are obtained which are neither accidental groupings nor groupings determined by habit.

In general the facts indicated above have been dealt

⁶Cf. Köhler, *The Mentality of Apes*, pp. 17-19.

with
or n
then
thir
The
gani
of th
logi
or o
vidu
char
of t
tism
tion
hav
aspe
zati
con
pro
to v
ape
me
rea
wh
Kö
pos
the
sc
ter
org
pro

in
so

with in two different ways. One way has been to neglect or minimize them. The other way has been to magnify them and regard them as manifestations of thought. A third method of dealing with them is to generalize them. The way of thinking which has magnified the facts of organization and order and regarded them as manifestations of thought, has commonly conceived of thought as a teleological process the existence of which is a guaranty of truth or of a correct solution of the problem with which the individual is concerned; thought is defined as that which is characterized by the solution of problems or the attainment of truth. Behaviorism and, to a certain extent, pragmatism have criticized the teleological aspect of the conception of thought; but behaviorism and, possibly, pragmatism have gone too far in denying not merely the teleological aspect of organization or order but also the fact of organization or order (in the main pragmatism has erred in the converse fashion by defining thought as by its very nature problem-solving). We may illustrate by a hypothesis as to what may have occurred in Köhler's observation on the apes. If an ape proceeded by a single continuous movement in an attempt to get a bunch of bananas out of his reach from the ground but swinging close to a box upon which he could climb, then, if the action solved the problem, Köhler may have jotted down a score for thought as opposed to random fumbling. But if the action failed to solve the problem then the behaviorist would have jotted down a score for random fumbling. Correcting both possible interpretations, we may regard the action as manifesting organization regardless of whether or not it solved the problem.

Such a view implies that organization or order is found in behavior other than behavior that as a matter of fact solves problems; and it might be possible to support the

affirmation that all behavior involves organization and order. No behavior is atomistic. Language behavior cannot be adequately described without taking into account the interaction and interconnection between parts of language behavior. Consequently, the presence of organization in behavior does not force us to recognize behavior plus thought. The assertion that language behavior is random behavior is in the right direction in denying the presence of a transcendental adjustment of language behavior to the solution of problems; but it goes too far when it implies that randomness excludes organization and interaction of bits of language behavior. The question may be left open whether the organization of behavior can be described merely in terms of spatial and temporal relations, or whether it involves a perception of reasons belonging essentially in the conscious field.

It seems probable that a fairly adequate account of behavior can be given in terms of the categories mentioned above; but we may still insist that no notice has been taken of the fact that we are often aware when we act of what is going on. Of the facts included under thought we still have consciousness or awareness on our hands. According to Dewey, language confers meanings on natural events. Through it "natural events become messages to be enjoyed," (*Experience and Nature*, p. 174) and through communication "A directly enjoyed thing adds to itself meaning, and enjoyment is thereby idealized" (*Ibid.*, p. 167). He goes on to say that "communication is a condition of consciousness" (p. 187); and he contends that "it is safe to say that psychic events, such as are anything more than reactions of a creature susceptible to pain and diffuse comfort, have language for one of their conditions" (p. 164). In a somewhat similar but more extreme fashion, Lashley asserts that consciousness is "a complex inte-

gra
ly r
and

con
goc
mit
aw
ten
son
spo
lan
De
Th

psy
pro
rec
ter
ska
ab
say
ma
tiv
co
wh
me

of
wi
by
ov

p.
H
pp

gration and succession of bodily activities which are closely related to or involve the verbal and gestural mechanisms and hence most frequently come to social expression."⁷

While some psychologists have denied the existence of consciousness altogether, and while there are some very good reasons for this denial, it seems impossible not to admit that we are a good part of the time conscious of, or aware of, things and objects about us. It may be contended, however, that what we are conscious of is always some response that we are making, and that of the responses which we make we are conscious or aware only of language responses; and I suppose that the contentions of Dewey and Lashley amount to something of this sort. There is a good bit to be said for this view. For instance, psychologists have often pointed out that learning often proceeds best when it is unconscious. That is, conscious direction of your feet when you are trying to learn to skate interferes with your progress—it is much better simply to skate. If being conscious of skating consists of talking about what you are doing with your feet, then instead of saying that unconscious learning is most rapid, we may make the much more intelligible statement that one activity proceeds better when it is not interfered with by the concomitant activity of talking. In the same way the somewhat puzzling unconscious drives and wishes are much more intelligible as un verbalized responses.

Nevertheless, the evidence seems insufficient in the face of the common experience of seeing and hearing things without making any response which can be observed either by the individual concerned or an external observer. Moreover, language is, certainly, not the sole and sufficient con-

⁷"A Behavioristic Interpretation of Consciousness," *Psy. Rev.*, Vol. 30, p. 238; a similar doctrine is found in J. F. Markey, "The Place of Language Habits in a Behavioristic Explanation of Consciousness," *Psy. Rev.*, Vol. 32, pp. 384 ff.

dition of consciousness, as we may talk when we are asleep, or may talk without knowing what we are saying. In a sense, doubtless, consciousness is correlated with integration. That is, our ordinary test of whether or not we *were* conscious of some response is our ability to recover it from our present behavior. For example, when we awake we often have a dim memory of having dreamed something the details of which are lost; and there is no reason to doubt that we often dream without remembering in the morning that we dreamed. In such a case, I suppose we should say that we were not conscious of dreaming; but this means merely that the dream is disconnected from our waking experiences. Something of the same thing happens in the case of divided personalities. Consciousness in such cases seems to be largely a matter of integration, and this integration is probably largely integration of language responses, though there is no reason to think that it is always such.

On the whole there seems to be no conclusive evidence to show that consciousness is always consciousness either of language responses or of responses in general. We seem to be conscious sometimes of responses and sometimes of things to which we do not respond or to which we do not respond in a way that is a counterpart of our consciousness. We are conscious both of our responses and of their setting. The question still remains as to the part that consciousness plays in behavior. In the account of the modification of behavior and of the organization of behavior we have implied, and it seems true in a general way, that behavior can be adequately described in terms of stimulus and response, neither stimulus nor response being defined in terms of consciousness. This conclusion is not dependent upon a realistic assumption of a world of external objects but holds true as well on the theory that the world is made

up of
consc
up of
consc
those
his r
tenti
refer
exist
num
fied,
can
if th
is no
way
like
serv
be n
wor
I
capa
thou
habi
buil
they
func
ject
havi
this
prof
acti
and
zati
con

up of bits of consciousness or of perspective from various conscious points of view. Even though everything is made up of bits of consciousness, we may distinguish the bits of consciousness making up an individual's responses from those which make up his awareness, and we may describe his responses without describing his awareness. The contention that stimuli and responses may be described without reference to the individual's consciousness (thought of as existing merely as accompaniment of an indeterminate number of stimuli and responses) must certainly be modified, however, with reference to images. Images which can hardly be correlated with implicit responses do exist, if the testimony of experience can be accepted; and there is no reason to doubt that they initiate action in the same way that external stimuli do. If this be true, then they, like words, may be the part of a complex situation which serves to initiate the response to the total situation. It is to be noticed, however, that in such cases images no more than words would have a reference to absent objects.

In summary we may say that if we mean by thought the capacity of human beings to modify their conduct, then thought is not identical with language activity. Language habits are built up in the same way that other habits are built up though they may have a strategic position in that they may be the principal nuclei around which stimulatory functions are built up. Thought as reference to absent objects may be explained in terms of language and other behavior so far as reference is identical with adaptation. If this identification is refused, the problem merges with the problem of meaning. Meaning as organization or interaction responses may be described in terms of behavior, and language may be the type of behavior whose organization is most important, though organization is not always confined to, or the result of, language behavior. Finally,

thought as awareness can, on the basis of the present evidence, by no means be either identified or perfectly correlated with language. In general, however, we may describe and control behavior adequately without knowing whether or not it is accompanied by awareness, though an exception must be made in the case of images. But images, when they exist and are effective, initiate conduct in the same way that words do, without referring to absent objects.

CHARNER M. PERRY.

UNIVERSITY OF TEXAS.

“
-
con
lea
thi
lap
dia
qu
a s
ra
a t
“V
te
qu
ho
no
en
kn
ot
or
no
ch
e
Jo

THE DOCTRINE OF RECOLLECTION IN PLATO'S DIALOGUES

“ALL enquiry and all learning is but recollection.”¹ This is the reply of Socrates in Plato's *Meno*, when he is confronted with the Sophistic puzzle about the possibility of learning, a puzzle which the youth Meno, tiring of hard thinking, introduces to justify his bewilderment at the collapse of the previous argument. In the opening of the dialogue, the spoiled young Thessalian airily flings out the question whether virtue can be taught, as if the query were a simple one, easily disposed of in a sentence or two. Socrates is not ready, however, to answer the question without a thorough investigation of the more fundamental problem, “What is virtue?” It is after several unsuccessful attempts to define virtue that Meno, inclined to give up the quest, brings up the stock puzzle of the Sophists: “And how will you enquire, Socrates, into that which you do not know? | What will you put forth as the subject of enquiry? And if you find what you want, how will you ever know that this is the thing which you did not know?”² In other words, if one does not already know, inquiry is not only futile, but impossible. For in the first place, one could not recognize the solution of his problem if he should chance to hit upon it. In the second place, one could not even begin an inquiry; for how would one know what to

¹ *Meno* 81C. All our quotations from the *Dialogues* in English follow Jowett's translation, Third Ed., Oxford University Press, 1892.

² *Meno* 80E.

seek if that for which search is to be made is wholly unknown.

The dilemma thus presented by Meno turns in part upon an ambiguity of the Greek word *μανθάνειν* which primarily means "to learn," but has also the derivative and colloquial meaning "to understand," "to take in the meaning."³ For the Platonic Socrates, however, a deeper and more than verbal significance is involved. For scepticism is in the air. The Sophists declare that no one can know anything except his own sensations and feelings, and since sensations are changeable and insecure and yet are the only source of knowledge, *all* knowledge is uncertain. Truth at least is relative to the individual; what a man senses and feels is true for him, but has no universal validity. There can be no absolute truth. This standpoint of relativistic scepticism is quite at variance with the position of Socrates and Plato. The Platonic Socrates accepts the Heracleitean doctrine of flux so far as the sensible world is concerned; but he is impelled by the very unknowableness of this world to the recognition of another realm which is the object of a truly scientific knowledge. He takes for granted that there is such a thing as science—a body of truth valid always and absolutely for every thinking mind. This system of absolute truth he calls the world of Ideas. It is of the Ideas only that there can be genuine knowledge.

By the Ideas are meant universal concepts which are objective (i. e., the *objects* not the *states* of the knowing mind), imperishable, immutable, and forever self-identical. They are absolutely immaterial and subsist independently

³ Cf. *Euthyd.* 275D-277D, where this same double meaning of the word is taken advantage of by two clever "eristics" to entangle the young Clineas in a hopeless contradiction. Tricked by the ambiguities of language, Clineas is forced to admit in turn the conflicting propositions that those who learn are (1) the wise and (2) those who are not wise; and again that when one learns one (1) already knows and (2) does not know what one is learning.

of space and time in eternal perfection. They can not be apprehended by the senses, nor could they were the senses ever so perfected and refined. They are known by the intellect alone. The whole system of these "universals," if known, would form a complete and perfect deductive science. This intelligible universe, the realm of these unchanging and universal natures, is the sole object of all true science.

The relation of the Ideas to the particulars of sense is expressed by Plato in several ways. Sometimes he uses the word κοινωνεῖν, "to have communion with," sometimes the term παρῆναι, "to be present with," and again the word μιμεῖσθαι, "to imitate." All of these words express some aspect of the relation of the concrete fact to the universal of which it is an instance. The particular book has communion with or participates in the Idea "Book." Or the particular book is a copy or instance of "Book," a copy which, however, approximately but never wholly embodies the Idea.

This brief statement concerning the Platonic notion of the objects of knowledge serves to bring out its sharp contrast with the position of the Sophists. Plato is out and out intellectualistic in his theory of knowledge. To know means to apprehend "universals". It is the "universal" which gives meaning and significance to the particular object of sense experience. It is, accordingly, the knowledge of "universals" to which Socrates has reference when he says that learning is recollection. Relativistic theories of knowledge are everywhere repudiated in the *Dialogues* and with special care and clearness in the *Theaetetus* it is shown that the relativistic theory of truth is logically untenable and self-refuting.

To come back to the *Meno*; it is pre-eminently on pragmatic grounds that Socrates here refuses to listen to the

Sophistic doubt as to the possibility of acquiring knowledge. He declares that such a doctrine is destructive of all mental effort, fatal to all aspiration and thirst for truth, and productive of idleness and lethargy.⁴ He recognizes, indeed, that the learning process presents a very real problem. But he feels that it is better to assume the possibility of learning as an hypothesis and to act upon it—better to postulate a theory that will offer a plausible solution of the difficulty, even though it may theoretically be open to doubt—than to surrender to absolute scepticism.⁵ He is certain *that* knowledge is possible. An hypothesis which would make intelligible *how* it is possible is the doctrine of recollection.

Socrates declares that the hypothesis that learning is recollection is suggested by the doctrine of priests and priestesses who have studied the deep things of their profession, and by Pindar and other poets. They all assert that the soul is immortal, has passed through many incarnations, having been born into mortal bodies again and again, but that before entering into association with the body the soul has beheld all reality and all existence. It is therefore no wonder that she can recall all that she ever knew about everything; for "as all nature is akin, and the soul has learned all things, there is no difficulty in her eliciting or as men say learning all the rest, if a man is strenuous and does not faint."⁶

Meno failing to understand what can be meant by saying that learning is always recollection, Socrates offers to exemplify—to exhibit a case of learning as recollection.

⁴ Cf. *Meno* 81D.

⁵ Cf. *Meno* 86C: "Some things I have said of which I am not altogether confident. But that we shall be braver and less helpless if we think that we ought to enquire than we should have been if we indulged in the idle fancy that there was no knowing and no use in seeking to know what we do not know;—that is a theme upon which I am ready to fight in word and deed, to the utmost of my powers."

⁶ *Meno* 81B.

He calls one of Meno's slaves, who has never studied mathematics, and assists him to work out, i. e., to "learn," a simple geometrical proposition. The theorem to be proved is that the area of the square described on the diagonal is equal to double the area of the original square. Socrates draws a diagram, and, as he questions the boy, directs his attention to the figure. The boy's first guess is that if one wishes to draw a square whose area shall be twice that of another, he must make its side twice as long, that if the original square be a two foot square, then the square sought must be a four foot one. Socrates easily convinces him that he is wrong (for $4 \times 4 = 16$ and not 8). The boy's next thought is that, since the line required on which to describe the square is more than two feet, and less than four feet, it must be three feet. Again his error is revealed (for $3 \times 3 = 9$). After a few more questions, the boy is made to *see* that the line required is none other than the diagonal of the first square.⁷

Meno has to admit that this knowledge has not been *imparted* to the boy. The boy's attention has merely been directed to the diagram, which has suggested the right answers. The only information that Socrates has *given* him is the technical name of a certain line—the diagonal. All the other answers have been drawn out of his own head. He has "brought up knowledge from within." It becomes clear to Meno that this boy, who has never studied geometry and yet recognizes the logic of the proof, *has* knowledge which he has never acquired through experience. Hence he must have had it "before he was a man."⁸ A corollary of this proposition is that the soul is immortal; but the *emphasis* is not so much on the temporal pre-existence of the soul, as on the fact that the mind of man is so constituted that knowledge is possible.

⁷ For the detailed experiment see *Meno* 82-86.

⁸ Cf. *Meno* 86A.

Pre-existence, in the ordinary sense of the word, is not an essential part of the doctrine of recollection, though no doubt Socrates believes in it in the main, but is not confident of the details. The one thing of which he is absolutely certain is that *somehow* the knowledge of "universals" is natural to the mind.

It is worthy of note that in the case of a mathematical truth such as that which is elicited in the *Meno*, the *one* particular instance suggests the universal. There is no question of induction from repeated particulars. The truth jumps out at one, so to speak. From contemplation of, or reflection upon, the *one* figure absolute certainty is derived. No combination of previous impressions could ever produce such knowledge, and concrete experiences can elicit it only because it is already latent in the soul.

There are, however, degrees of knowledge. All knowledge involves a recall of Ideas, or "universals," but the same degree of certainty is not attained in all cases. In the realm of mathematical truth, absolute certainty is reached at once. This is true of all pure Ideas—the subject matter of the science of Dialectic.⁹ But in the realm of "becoming," the sensible world, there is an irreducible, irrational element which can never be wholly overcome. When the mind deals with sense objects, therefore, it attains at first to a very rudimentary knowledge only, which at best is "true opinion." In order to attain to the dignity of genuine knowledge, the "universal" which is apprehended must be raised to clear explicit expression; and it must be connected with a system of reasoned and logical truth.

Since ἀνάμνησις is identified with the whole learning process, it must go beyond sensuous intuition to clear discursive reasoning. The whole process involved in rising

⁹ Cf. *Rep.* VI, 510 ff.

from "true opinion" to "knowledge" is included in the awakening of Ideas. The particular judgments of the ordinary man *may* be true, but in order to become *knowledge* he must be able to give a precise and logical account of them. As Socrates says in his picturesque language: "While they abide with us they [true opinions] are beautiful and fruitful, but they run away out of the human soul and do not remain long, and therefore they are not of much value until they are fastened by the tie of the cause."¹⁰ He expressly identifies this fastening of opinion by the tie of the cause with recollection; the αἰτίας λογίσμος. is ἀνάμνησις.¹¹ The importance of this identification of ἀνάμνησις with the *search for causal relations which shall bring stability into our opinions* is emphasized by the fact that Plato repeats again in the *Phaedrus* in almost exactly the same language as the *Meno* that: "A man must have intelligence of universals, and be able to proceed from the many particulars of sense to the one conception of reason; *this is the recollection* of those things which the soul saw while following God."¹² It should be noted, however, that the search for causes means for Plato, not the inquiry into what Aristotle called the material and efficient causes but the quest for the formal and final causes. What is the *essence* or *Idea* involved in a phenomenon, and what is its *purpose*? These are for him the truly scientific questions.¹³

This identification of ἀνάμνησις with the scientific method makes it quite evident that the process of recall is no instantaneous or miraculous one. It is the gradual bringing of the intelligible world into clear consciousness. The philosopher advances to true knowledge because he does systematically and purposefully what ordinary men do in

¹⁰ *Meno* 98A.

¹¹ Cf. *ibid.*

¹² *Phaedr.* 249C. The italics are mine.

¹³ Cf. *Phaedo* 98-101.

a haphazard and intermittent manner. The slave boy in the *Meno*, under the skillful questioning of Socrates, recognizes some elemental truths about geometry. But Socrates declares: "At present these notions have just been stirred up in him as in a dream; but if he were frequently asked the same questions in different forms, he would know as well as anyone at last."¹⁴ The process of learning is a long and arduous one. No one is endowed with ready-made knowledge which comes without effort. Nothing could be farther from the Platonic doctrine of recollection than the crude theory of "innate ideas" (a theory never held by any philosopher of first rank) which dispenses with the need for industry and application.¹⁵

All men have the capacity for learning and are potential philosophers, just as the slave boy is a potential geometer. But there are few who realize their capacities. There are few who will take the trouble to "tie their opinions by the tie of the cause." Ideas are by most men beheld in a dreamy sort of way and not rooted in logical reasons. Their state is that described in the *Politicus*: "Every man seems to know all things in a dreamy sort of way and then again to wake up and know nothing."¹⁶ To make knowledge secure, time and effort are required.

While the degree of attainment of true knowledge is thus largely dependent on the amount of effort and earnest application expended, the Platonic Socrates is not blind to the fact that men differ in their *capacities* for knowledge. In the *Phaedrus* myth the *fact* of individual differences in the native endowment of men is recognized and, while no scientific explanation is attempted, an imaginative account is offered. The suggestion is made that perhaps some souls have seen the Ideas for a short time only or they may

¹⁴ *Meno* 85D.

¹⁵ Cf. *Theaet.* 186C.

¹⁶ *Polit.* 277C.

have been unfortunate in their earthly lot and "lost the memory of the holy things which once they saw. Few only attain an adequate remembrance of them."¹⁷

The best clue to an understanding of the deeper meaning of the doctrine of recollection is furnished by the phrase, "all nature is akin."¹⁸ The *Phaedo* contains the same reference to the soul's kinship with nature. Learning is said to be the recovery of knowledge which is "natural to us"¹⁹ and again the state of the soul called "wisdom" is said to be the "passing into the world of purity and eternity, and immortality, and unchangeability which are her kindred."²⁰ In other words, it is because the soul is akin to reality that she can know. In the *Republic*, the philosopher is said to attain to the knowledge of every essence "by a sympathetic and kindred power in the soul."²¹ The world is regarded as rational through and through. The knowable world is the real world. Hence, since the nature of the soul is ultimately one with the nature of the real, it is not strange that she can know. The view that "all nature is akin" receives perhaps its fullest emphasis and elaboration in the *Timaeus*. Here the creator is represented as making the world after the pattern of the eternal Idea. He forms within the universe a *soul*, which partakes of reason and harmony. The soul of the universe is formed "out of the indivisible and unchangeable and also out of that which has to do with material bodies."²² The world soul is created first and then the corporeal universe fashioned within her. Thereupon the soul of man is molded out of the same elements as the world soul.²³ Since the world soul and the human soul are both made out of the same ultimate constituents—the being which is undivided

¹⁷ *Phaedr.* 249E-250A.

¹⁸ *Meno* 81B.

¹⁹ *Phaedo* 75E.

²⁰ *Phaedo* 79D.

²¹ *Rep.* 490B.

²² *Tim.* 35A.

²³ *Cf. ibid.* 41D.

and is always the same and the being which becomes and is divisible in bodies (the "same" and the "other")—the soul corresponds in nature to the universe. It is therefore but natural that like should perceive like. The world is not alien; our minds and reality are not radically discrepant with one another. In learning the soul comes to that which is her own kindred.²⁴

From the account in the *Timaeus*, it is clear that knowledge of the Ideas has not been gained in any previous life on earth but is the *original* possession of the soul. For it is stated that the creator showed the souls the nature of the universe before he sowed them in mortal bodies for the first time.²⁵ Moreover it is stated that one element in the composition of the soul of man is the "same," the immutable, eternal, indestructible, which is reason, and akin to the Ideas. The doctrine of recollection, thus, is not to be interpreted as the doctrine that men remember what has been learned in former incarnations. It is much more profound than that. It expresses the rational nature of soul itself.²⁶

II.

In the *Meno*, the doctrine of ἀνάμνησις is stressed for its explanation of the possibility of learning; the doctrine of the pre-existence of the soul is strictly subordinate to the epistemological argument, and merely suggests in a mythical way how such a theory may be possible. In the

²⁴ *Ibid.* 37A-B. The context of this passage makes it seem to refer to the world soul, but it may be inferred that "soul" in general, "soulness," is the subject of discourse. Or, if not, at least it may be applied with equal truth to the nature of the human soul as to the world soul, for Plato has clearly stated that they are made of the same ingredients.

²⁵ *Ibid.* 41D.

²⁶ Cf. Zeller: *Plato and the Older Academy*, p. 126 note: "And it seems equally clear to me that the doctrine of Reminiscence really presupposes the Ideas. The objects of Reminiscence can only be universal concepts—the sensuous forms of which meet us in individual things, not presentations which we have experienced in former lives."

Phaedo, however, we find the reverse. Here the doctrine of recollection is offered as a part of the proof of the immortality of the soul.²⁷ In several respects, also, the meaning of the doctrine itself is elucidated and refined in a way that supplements the account in the *Meno*.

In the *Phaedo*, Cebes, a Pythagorean friend of Socrates, refers to the doctrine as a favorite one of the aged sage who is so soon to drink the hemlock. When Simmias asks for the proof of the doctrine, Cebes refers to the way in which mathematical truths may be elicited by questions, as is demonstrated in detail in the *Meno*. Socrates further elucidates the meaning of the theory by reference to what is now called the "association of ideas." He declares that the doctrine may be illustrated by our experience of recall—when we see one thing we may be reminded of another, as when a lyre puts us in mind of the youth who was wont to play it. Anyone seeing Simmias may be reminded of Cebes, or seeing a picture of Simmias may remember Cebes. Or again, seeing a picture of Simmias puts one in mind of the man himself. Being reminded consists in calling to mind something which is not now presented to the senses, but which is nevertheless in the possession of the mind. Such empirical recall is analogous to what takes place in all learning. What is presented to the senses calls to mind something which was never derived from the senses, and which is nevertheless felt to be the mind's own possession and to have been always known.

Undoubtedly it is the feeling tone which accompanies the learning process that, in part at least, causes Socrates to refer to the latter as a case of "recollection" and to connect it with temporal and empirical memory. When one

²⁷ The writer's contention that the deeper meaning of the doctrine of recollection is independent of the theory of metempsychosis does not imply that Socrates did not believe in individual immortality. It seems most probable that he did.

has solved a mathematical problem, for example, one experiences a feeling of certainty, of satisfaction, almost of familiarity, which can best be expressed by the word *recognition*. It is as if the knowledge gained is really an old friend, forgotten for a while, and again called to mind. When one learns, one *recognizes* truth. The emotional fringe of warmth and intimacy which gathers about knowledge that has been acquired is unquestionably responsible for the term ἀνάμνησις, and probably for the language which speaks of logical priority as though it were temporal.

Archer-Hind remarks that the order of the Socratic illustrations of recall through association seems at first sight strange, for the transition is from the complex to the simpler and more direct cases of association. But when one remembers the use for which Plato intends the analogy, he realizes the appropriateness of Plato's emphasis. For the doctrine of Ideas conceives of the things of sense as imperfect copies of the Ideas. The particulars therefore remind one of the Ideas in precisely the same way as the picture of Simmias calls to mind the person himself.²⁸

When one sees a picture of a familiar individual one is not only reminded of the living person but he also judges whether or not the picture is a good likeness.²⁹ This consideration leads Socrates to a further step in his argument. If there is such a thing as absolute equality (and of this Simmias is unshakeably confident), and if no two sensible objects ever perfectly exemplify such equality, the recollection of the "universal" *equality* cannot have been derived from previous sense presentations. When equal pieces of wood, stone, and other objects are seen, one is conscious of a standard of perfect "equality" of which they

²⁸ Archer-Hind, *The Phaedo of Plato* (New York, 1894), Note on *Phaedo* 74.

²⁹ *Phaedo* 75A.

fall short. Since no one has ever experienced perfect "equality" in this life, the knowledge of this standard must antedate birth. For it is impossible that one should be "put in mind" of something of which he had no previous knowledge. One could not realize that the particular falls short of a standard unless the standard were somehow already in the possession of the mind. But this pre-natal knowledge must be not only of equality but of all other Ideas for, says Socrates, "we are speaking not only of equality but of beauty, goodness, justice, holiness, and of all which we stamp with the name of essence in the dialectical process, both when we ask and when we answer questions."³⁰ Two alternatives only are possible: "Either we had this knowledge at birth and continue to know through life; or after birth those who are said to learn only remember and learning is simply recollection."³¹ Now if every one actually knows all the Ideas at birth and continues to know them throughout life, all men ought to be able to give an account of them. For if a man truly has knowledge he can give an account of it. It is obvious, however, that not all men can give such an account. In fact, Simmias fears that when Socrates is gone, there will no longer be any living man who can give an account of the Ideas. Evidently, then, knowledge of the Ideas must be potentially and not actually in the soul at birth. All men must have "forgotten" them and be in the process of "recollecting" them.

Human beings, however, are not believed to acquire knowledge in some miraculous fashion apart from sense experience. Socrates expressly declares that the senses are needed to call the Ideas to mind: "We recognize that this absolute equality has only been known and can only be known through the medium of sight or touch, or some

³⁰ *Ibid.* 75D.

³¹ *Phaedo* 76A.

other of the senses . . .³² In our human state, because the soul is imprisoned in a body, the senses are indispensable for the acquisition of knowledge. Nothing can be known without them.³³

Nevertheless, Socrates holds that the senses are not unmixed blessings. The life of the senses distracts the soul from her true life; sights and sounds, pains and pleasures hinder the thinking process, true existence and absolute truth are revealed in thought alone.³⁴ Therefore the philosopher will be glad to be rid of the body, "for if while in company with the body, the soul can not have pure knowledge one of two things follows—either knowledge is not to be attained at all, or if at all, after death."³⁵ And not only are the senses distracting elements but even in their own proper sphere they are untrustworthy guides.³⁶ They are inaccurate witnesses to the truth. When the soul uses them she is dragged down into the world of becoming and is confused. Nothing permanent or true can be asserted of sensations apart from the "universal" or system of "universals" which the sensation serves to call to mind. The sensible *per se* is unknowable. Moreover the body has no organ for the perception of universal notions such as "being" and "not being," "likeness" and "unlikeness," "sameness" and "difference," "unity" and all other "numbers" which are applied to the objects of sense.³⁷ They are perceived by the mind itself without any organ. And it is precisely of these objects that the mind has its most genuine knowledge.

³² *Ibid.* 75A.

³³ *Cf. Tim.* 68E-69A, and also 47B.

³⁴ *Cf. Phaedo* 65-66.

³⁵ *Phaedo* 66E.

³⁶ *Cf. Ibid.* 65B; also *Rep.* VII 523E.

³⁷ *C. Theaet.* 185C.

III

Professor Stewart has significantly pointed out that in the *Phaedrus* the doctrine of recollection is presented from a different point of view or rather depicts a different *mood* from that prevailing in the other *Dialogues*. He distinguishes two kinds of ἀνάμνησις :

“(1) Empirical Recollection in which either (a) a similar particular is recalled, or (b) a general point of view taken, a law of nature is conceived; and (2) Transcendental Recollection in which a feeling is awakened by the presence of some sensible object—a feeling which is always ready to condense itself, as it were, round, to ‘fringe’ an *image*, so that the image becomes transfigured, becomes an object of wonder, and takes rank as archetype of the sensible object of which it is after all, the mental representation.”³⁸

The prevailing *mood* of the *Phaedrus* account of ἀνάμνησις is what Professor Stewart calls the “transcendental” one. It is the mood which is prominent in esthetic experience. Recollection is presented as insight into the higher values, and especially as appreciation of beauty. The beautiful object becomes a symbol of some higher power, or as Plato would say, of the Idea of which it is an imperfect copy. Intuition grasps the one spiritual system of the universe as “Heavenly Beauty residing on Earth.” At first this wonderful vision of beauty is revealed only in flashes, but in time it comes to be the object of an habitual faith. The eternal world, beyond sense and discursive understanding, is lived in, not known but felt. It is beyond reason, not because it is irrational (for Plato all reality is most rational) but because in this life it transcends complete apprehension by reason. If human reason could reach its goal, Beauty, Truth, and Virtue would be

³⁸ Stewart, J. A., *Plato's Doctrine of Ideas*, p. 194.

seen as one. But since it is impossible for mortal man to attain this complete knowledge, the soul knows it only in flashes of insight which it treasures and reflects upon until eternal Truth, Goodness, and Beauty became the sole passion of the soul. A philosophic love is then awakened which is no mere desire for cold facts, but an ardent search after and worship of the supersensible Ideas.

The esthetic mood is more or less fleeting and only imperfectly translatable into articulate language. It is best conveyed or described in myth or symbol. It is this transcendental mood which is so vividly embodied in the *Phaedrus*. The gist of the myth may be summed up as follows: The soul, in its prenatal state, is represented as a chariot-eer driving a pair of winged steeds in the train of the gods around the circle of heaven, where absolute Beauty, Goodness, and Wisdom shine in all their eternal glory. One of the steeds is noble; the other is ignoble and bent on dragging the soul down to earth. The wings of the soul are intended to carry her up into the upper world where she may feast on the pure forms of reality itself. The souls of the gods have no difficulty in reaching the desired place, but mortal souls, having an unruly steed to manage, see only broken glimpses of the eternal verities. Some souls give up the struggle and leave the path which leads to the beatific sight. Some of them even lose their wings and fall to earth, taking human forms and becoming entombed in bodies. At her first birth the soul becomes man, never beast. The soul that has seen the most of the truth becomes a philosopher, or creative artist; the next best, a righteous king or warrior chief; and so in order—politician, a lover of gymnastic, prophet, poet or other imitative artist, artisan, sophist, tyrant. These are all states of probation and in the next life he who does well improves, and he who does ill deteriorates in his lot. All men have at

one
frag
wha
The
with
min
mor
phil
his v
sinc
it ab
of a
reco
divin

wor
clear
any
pres
wor
of u
irrit
teeth
real
Bea
and
purg

who
kind
ima

3
4
4
4

one time seen the truth and have some conception, however fragmentary, of universal goodness and beauty. That is what differentiates the soul of man from that of the beast. The mass of men, however, recall only confusedly and with difficulty the things of the immaterial world. The mind of the philosopher, on the other hand, has retained more of the vision. If he chooses to live the life of a philosopher three times in succession he may finally recover his wings and return to the place from which he fell. But since this recovery takes place by means of ἀνάμνησις, it is absolutely necessary that the soul be united to the body of a man in order that it may recover the lost wings. For recollection takes place when sense objects suggest the divine realities.

Of all the representations of the Ideas in the sensible world, that of Beauty is the most striking and most clearly apprehended.³⁹ When, then, the philosopher sees anyone "having a god-like face or form, which is the expression of divine beauty,"⁴⁰ he is aroused to awe and worship. His "wings begin to sprout." He is in a state of uneasiness and ferment "which may be compared to the irritation and uneasiness in the gums at the time of cutting teeth." Men say that this is "being in love" but it is really the process of growing one's spiritual wings again.⁴¹ Beauty embodied in physical form calls to mind the divine and eternal Beauty which is perfect, unchanging and pure. This is the esthetic aspect of ἀνάμνησις.

Now when the philosopher has found his love—the one who to him suggests absolute beauty—he makes of him a kind of god, and "fashions and adorns him as a sort of image which he is to fall down and worship."⁴² He is

³⁹ Cf. *Phaedr.* 250B-E.

⁴⁰ *Ibid.* 251A.

⁴¹ Cf. *ibid.* 252B.

⁴² *Phaedr.* 253A.

deeply interested in his beloved and seeks to form his character and disposition into likeness with the divine "so far as man can participate in God."

In the *Symposium* we are told that the object which lovers really have in mind is "birth in beauty," whether of body or of soul. Love is not love of the beautiful only; it is desire of parenthood. But there is a spiritual as well as a physical parentage.⁴³ The philosopher in whom has been awakened a philosophic love seeks to associate himself with another beautiful soul in order that the desire for spiritual children may result in the birth of noble thoughts and ideals. Ideas are brought forth when two lovers—worshippers of beauty, wisdom, and virtue—are associated together in a common creative self-expression.

From Socrates' own practice, it can be seen that such an association of two fair souls is his ideal of the way in which recollection may take place. His whole method is an exemplification of just such a "birth in beauty" of noble thoughts. Socrates conceives it to be his duty to evoke in others true and explicit Ideas; and his method is always that of search in company with others. Dialectic, or conversation, is the proper means of inquiry. A younger learner united with a more mature fellow-inquirer, who sympathetically guides the quest and now and again throws in the right suggestion, is the ideal combination for the bringing forth of wisdom and virtue, "which are their common offspring."⁴⁴ In the *Euthydemus* the dialectical method of Socrates is sharply contrasted with the practice of the Sophists, who are merely concerned with putting misleading questions and exhibiting their cleverness, and who consequently accomplish nothing. The method of Socrates, on the other hand, succeeds in drawing out the

⁴³ *Symp.* 208-209D.

⁴⁴ *Symp.* 209D.

mind of the respondents, and therefore leads to some conclusion, even though it may be only that so far the final solution has not been reached and that the inquiry must be continued. Some clarification of concepts at least is obtained.

It is in this same spirit that Socrates in the *Theaetetus* compares his art with that of a midwife.⁴⁵ Just as his mother attended women who were about to give birth to children, and assisted them in their labors, so Socrates thinks of himself as attending at the birth of ideas. By skilful questioning and suggestions, he is able to assist others to deliver themselves of thoughts, which though potentially in their minds, might not, without his aid, come to conscious fruition. He does not impart information; he merely draws from the soul what is within, and her very own. While the doctrine of reminiscence is not explicitly referred to in the *Theaetetus*, this comparison of his method to that of midwifery seems clearly to imply it.

Indeed, the whole theory of education in the *Dialogues* rests upon the idea of the process of education as one of ἀνάμνησις. Teachers are needed, but they can not pour knowledge into the students' minds as into an empty vessel. Realizing that no knowledge is the pupil's own which he has not labored with and thought out for himself, the teacher must act as a midwife for souls. In the *Republic* (where his theory of education is worked out in detail) Socrates declares that knowledge can not be put into the soul, "like sight into blind eyes" for "the power and capacity of learning exists in the soul already."⁴⁶

Since Plato's whole theory of education implies the doctrine of recollection, and since teaching is drawing out of the mind what is latent there, the vexed question of the

⁴⁵ Cf. *Theaet.* 149-151.

⁴⁶ *Rep.* 518C.

teachability of virtue which is discussed in the *Protagoras* and the *Meno* is solved. For the teachability of virtue is a corollary of the Socratic doctrine that goodness is knowledge. This doctrine is implicit in all of the earliest dialogues. Real goodness or virtue depends upon a grasp of intelligible principles. No knowledge of any kind can be passively acquired; but active response of thought to the suggestions given out by a more mature fellow-seeker will result in a virtue that is grounded on sound insight into the principles of conduct.

The Socratic doctrine that virtue is knowledge is not to be understood as maintaining that unimpassioned logic can motivate right conduct. What it teaches is that the reason of man does not express itself in "cold" logical thinking but includes an element of passion and ardour. Reason is afire with the love of beauty and goodness as well as of truth, and is therefore capable of inspiring to life and action, as reason in the more narrowly intellectualistic sense of the word can not do. Knowledge lays hold primarily of the intellect, but through the intellect of the whole personality, moulding the will and emotions into absolute unity with itself. True knowledge *can*, therefore, make a man good.

Virtue can be taught, moreover, because the ideals by which conduct is regulated are latent in the soul. They can as little as mathematical axioms be acquired from particular experiences alone. The virtues of courage, temperance, justice, and holiness, which we passionately admire and try to emulate are not found perfectly exemplified in any human being or society;⁴⁷ the particular instances always fall short of perfection.⁴⁸ Because moral ideals are not found fully exhibited in this life, it must be, thinks

⁴⁷ Cf. *Phaedo* 75C.

⁴⁸ Cf. *Phaedr.* 250B.

Socra
ence.

M
world
and t
the v
by its
fleeting
Many
posse
arden
He h
"ord

E
divin
all k
know
flesh
aspe
the l
and
paci
Alth
not
and,
fere
like
reco

exp
Me

Socrates, that they are recollected from a previous existence, or rather are original in the nature of the soul itself.

Many men, however, are only faintly aware of the world of ethical values. The busy world of temporal tasks and the satisfaction of human desires and cravings obscure the vision of the soul. The soul is limited and hampered by its association with matter. Its eye is turned toward fleeting shadows and does not behold the eternal verities.⁴⁹ Many of us, in the words of Mathew Arnold, "never once possess our souls before we die." But the philosopher, the ardent lover of wisdom, has discovered what true life is. He holds converse "with the divine order" and becomes "orderly and divine, as far as the nature of man allows."⁵⁰

Becoming good, then, is a growth into a likeness to the divine. The contemplation of the "Good" is the goal of all knowledge and all striving. He who attains to that knowledge becomes free from every imperfection of the flesh. And this growth into likeness to the divine is one aspect of "recollection." It is a bringing into actuality of the latent true self. The soul which is akin to the Ideas, and therefore to absolute virtue, has within itself the capacity of growing into actual likeness to the "Good". Although degraded by contact with the body, the soul cannot but preserve to some extent its affinity with the Ideas; and, under proper conditions and in varying degrees in different individuals, the soul may still bring itself into actual likeness to the Ideal. Growth into nobility of character is recollection of the ethical standards.

To summarize:

The doctrine of recollection is primarily an hypothesis explaining the learning process. It is connected in the *Meno*, *Phaedo*, and *Phaedrus*, with mythological theories

⁴⁹ Cf. *Rep.* VII, 514-515.

⁵⁰ Cf. *ibid.* 500D; also *Symp.* 212A.

concerning the pre-existence and re-incarnation of the soul. But it may be stripped of these mythical trappings, which Socrates himself says are not to be taken too seriously; and then the kernel of the doctrine may be perceived. This teaching is that knowledge of the Ideas is never gained from sense experience or from a comparison of particular presentations, but is the original possession of the soul. Sense experience merely serves to *suggest* the Ideas; it does not impart a knowledge of them. Knowledge is natural to man. It is not something alien imported into the mind, but is always potentially present. But the recovery of latent knowledge requires prolonged effort and consistent thinking. The Ideas must be thought out in their causal relations, or knowledge will lack stability. This whole process, which should continue all through life, is identified with recollection.

The doctrine further takes on a mystical tinge as the esthetic ideals are approached. The ἀνάμνησις of beauty has a feeling tone which can not be logically expressed. The esthetic "recollections" are intuitions of realities which are glimpsed but not known. But even this esthetic experience is not fundamentally *higher* than the rational one. It should lead to further investigation and growth in the understanding of truth. This it does by awakening the impulse of philosophic love, which urges on to a deeper rational knowledge. It also leads to the love which desires "birth in beauty" and causes a man to associate himself with other noble minds in a quest for clear and explicit knowledge, for beautiful thoughts and ideals.

The doctrine of recollection is also the foundation of the educational theory of the *Dialogues*. No knowledge of any kind is gained except through the unfolding of latent knowledge already in the mind. It therefore follows that the "pouring in" process of teaching is a faulty

one, but when
Si
edge
be ta
logica
them.
may
made
temp
the in
T
think
real.
and
cont
of p
ciple

T
tion
ther
serv
have
sugg
com
othe
catic
of k
it w
judg
5
p. 180
5

one, based on a wrong understanding of what happens when one *learns*.

Since virtue is identified with knowledge, and knowledge is native to the mind, it is argued that virtue can be taught. It can be evoked because ideal standards are logically prior to the particular acts which exemplify them. It can be taught, furthermore, because these ideals may be brought into clear and distinct apprehension and made to serve as types or patterns which are lovingly contemplated and earnestly imitated. Thus a man grows into the image of the divine "as far as mortal man may."

The whole doctrine is based, so the present writer thinks, on the fact that mind is akin to what is most real. Reality and soul are closely and intimately united, and therefore soul is capable of knowing the Ideas, of contemplating and appropriating the immutable ideals, and of progressively attaining unity with the rational principle of the universe.

IV.

The question of how much of the doctrine of recollection was original with Socrates and Plato is one on which there is no general consensus of opinion. The older conservative tradition attributes it to Plato. Later critics have come forward with other theories. A. E. Taylor suggests that the doctrine as applied to mathematical truth comes from Pythagoras.⁵¹ Professor John Burnet, on the other hand, credits to the originality of Socrates the application of an old religious belief to science and to the theory of knowledge.⁵² When such eminent authorities disagree, it would seem presumptuous for the present writer to pass judgment. But whether the doctrine *as found in the Dia-*

⁵¹ Cf. Taylor, A. E., *Plato, the Man and his Work* (New York, 1927), p. 186 note.

⁵² Cf. Burnet, John, *Plato's Phaedo* (Oxford, 1911), p. 52.

logues is to be attributed to Plato, Socrates or Pythagoras, it is certain that the religious beliefs which suggested it were common property of the mystery religions and were very widely current in the Greek world during the fifth century B. C. Its legends form the substratum of much of the imagination and poetry of the age.

Plato was evidently deeply impressed by Pindar whom he often quoted with respect.⁵³ In the *Meno*, now generally admitted to be the earliest *Dialogue* in which the doctrine of ἀνάμνησις was propounded, it is Pindar who is cited as authority for the doctrine of immortality and re-incarnation. But ultimately these beliefs go back to earlier and priestly sources. As Professor Stewart puts it: "Orphic doctrine refined by poetic genius for philosophic use is the material out of which Plato weaves his Eschatological myths."⁵⁴ The chief of these Orphic sources was a popular manual called Κατάβασις εἰς Αἴδου, in which the experiences of the immortal soul until it frees itself by penance from the cycle of rebirths is described, a work which Stewart tells us "lay at the foundation of Pindar's theology, was ridiculed by Aristophanes in the *Frogs*, was the ultimate source of the Νέκυια of Plutarch, and Virgil, and greatly influenced neo-platonic doctrine."⁵⁵ Pythagorean philosophy, at least in its earlier forms, also held to the doctrines of rebirth and immortality for the individual soul. "The soul of man . . . is a daimonic immortal being that has been cast down from divine heights and confined within the "custody" of the body. It has no real relationship with the body; it is not what may be called the personality of the individual visible man; any soul may

⁵³ Cf. *Meno*. 81B, also *Rep.* 331B, *Euthyd.* 304B, *Phaedr.* 227B and 236 D, *Meno* 76, *Rep.* 365B, and *Theat.* 175E.

⁵⁴ Stewart, J. A., *The Myths of Plato* (London and New York, 1905), pp. 68-69.

⁵⁵ *Ibid.*, pp. 65-66.

dwelling in any body."⁵⁶ The soul at death is separated from the body, and must first endure a period of purification in Hades. Then it seeks out another body and wanders a long time until it is finally fully cleansed from its imperfections and returns to its original state unhampered by the chains of the body. This is the older Pythagorean tradition, and while the doctrine of metempsychosis was being dropped in "modernistic" circles in Plato's day,⁵⁷ it was undoubtedly accepted by some members of the order, the "fundamentalists" so to speak. The tradition at least was well known, and may easily have suggested both the mythical setting and the scientific elaboration of the doctrine of recollection found in the *Dialogues*.

One point, however, is as certain as it is important: the doctrine of recollection found in the Platonic *Dialogues* is very different from the older tradition of a memory of former lives. Very ancient legends declare that Pythagoras himself could remember the earlier incarnations through which his soul had passed and of which he gave information for the instruction of the faithful, and Empedocles is also said to have held that he remembered what he had learned when he was a god.⁵⁸ These traditions of memories of former lives were undoubtedly influential in determining the form and language in which Plato expressed his doctrine of reminiscence. But one can scarcely too much emphasize the point that the Platonic doctrine, so far from referring to a memory of former lives, expresses the view that the knowledge of the Ideas is the *original* possession of the soul. This knowledge could not be the result of individual presentations in either a corporeal or an incorporeal existence. *All* experience and *all* learning, according to Plato, presupposes the possession of

⁵⁶ Rhode, Erwin, *Psyche*, p. 375.

⁵⁷ Cf. Taylor, A. E., *Plato, the Man and his Work*, p. 186 note.

⁵⁸ Cf. Rhode, Erwin, *Psyche*, p. 375 and p. 406, note 96.

universal notions already in the soul. Learning in a previous existence would require ἀνάμνησις no less truly than learning in the present life. (The soul was *never* a blank tablet.) Universals can never be acquired from individual presentations. To suppose that the soul is reminded of something learned in a previous life would merely push the problem back, leading to an infinite regress. "Being independent of any traceable experience, the elemental principles of this science, and of all sciences must have been acquired in some ante-natal period, or rather they were *never acquired* at all. They belong to the very nature of soul herself,"⁵⁹ says Alfred William Benn. Ἀνάμνησις is not a memory of *events* but a metaphorical way of speaking of the most essential function of mind itself. The *Timaeus* (41 D-E) represents the creator as endowing the souls with the knowledge of the Ideas at the time of their creation.

Whether Plato actually accepted the doctrine of the temporal pre-existence of the soul is a debated question.⁶⁰ But if, as has been argued above, Plato supposes the knowledge of Ideas to be original in the soul, rather than acquired in earlier lives, the question whether he believed in metempsychosis is relatively insignificant for our problem. Whether Plato and Socrates (either or both) accepted the Pythagorean doctrine of prior incarnations, or the theory of the actual survival of the individual soul in a temporal sense, makes little if any difference to the actual meaning of ἀνάμνησις. As Taylor says: "One should bear in mind

⁵⁹ *The Greek Philosophers* (London, 1882), p. 211.

⁶⁰ Zeller declares that Plato accepts the main features of the doctrine though he is not sure of the details. (Cf. *Plato and the Older Academy*, pp. 404-405.) Hegel holds that Plato assumed pre-existence and immortality for the world soul only. (Cf. *Werke*, XIV, pp. 207 ff.) Stewart cites Couturat and Coleridge as agreeing with Hegel, and himself inclines to the view that Plato conceived the doctrine of immortality not dogmatically but in myth. (*Myths of Plato*, p. 61.) Taylor thinks that *Socrates* at least is firmly convinced of the fact of immortality though he may be dissatisfied with the scientific proof of it. (Cf. *Plato, the Man and his Work*, pp. 138.)

that ἀνάμνησις does not properly mean in the theory 'remembering' but 'being reminded of something.' Sensible experiences are always 'suggesting' to us ideal standards which none of them actually exhibit."⁶¹ The essence of the doctrine is that the mind is such that it can be "put in mind of the Ideas."

Finally, perhaps we should cite the opinion of Ritchie:

"The doctrine of recollection necessarily implies only the presupposition in knowledge of an eternal element, i. e. an element not dependent upon temporal conditions; it implies the eternal character of thought, not the continued duration of the individual human person, although Plato, himself, at least at some part of his life, may quite well have interpreted it in connection with actual belief in continued personal or at least individual existence."⁶²

"The doctrine of recollection means when translated from poetry to philosophy that if knowledge is to be possible, mind in its own nature must be 'akin to' the ultimate nature of things." "In this philosophical sense stripped of its mythical setting it is the doctrine of all idealist theories of knowledge, of all theories that deny that knowledge is adequately explained when it is analyzed into nothing but sensations or impressions made upon a previously blank tablet of the mind."⁶³

Like all rationalists, Plato believed in the capacity of the human mind to grasp the true nature of reality—in the power of reason to apprehend the absolute, true and eternal nature of things. Such a faith in the adequacy of reason requires for its justification some theory of the possibility of knowledge. Due to the mythological background of his age Plato came to express the theory as he did; but in some way every rationalist must show that the

⁶¹ Plato, *the Man and his Work*, p. 138.

⁶² Ritchie, D. G., "On Plato's *Phaedo*," *Mind*, XI, pp. 353ff.

⁶³ Ritchie, D. G., *Plato*, pp. 79-80.

mind and reality are related, and that the mind has *within itself* the *capacity* for knowing the real. The theory of ἀνάμνησις is akin to all rationalistic doctrines of knowledge, of "innate" or "a priori" ideas, because only in some such manner can the claims of reason be vindicated.

But Plato was not only a rationalist but a rationalist whose temper was tinged with mysticism. His was the rare combination of a poetic with a logical mind. The mythical treatment of philosophical truth had a charm for him. It was because of the poet, as well as the logician, in him that the doctrine of recollection at times assumed a transcendental meaning, becoming a theory not only of knowledge but of art and morality as well. It partook of a rich suggestiveness lacking in the cold reasoned theories of most rationalists. To the love of the mystic and the symbolic that Plato combined with his insistence on clear reasoning and logical argument, must be referred the beautiful setting of the doctrine and its employment in the interpretation of esthetic and emotional experience.

The soil out of which the doctrine of reminiscence grew was the rich religious imagery which was the common heritage of the day. Its roots are to be found in the demand for some theory that could explain the possibility of knowledge, and in the rationalistic temper of Socrates and Plato. But its poetry and perennial charm are due to the mystic and transcendental *mood* of the writer of the *Dialogues*.

V

The doctrine of recollection, as interpreted in this study, appears, as *primarily* a theory of knowledge, which, stripped of its fanciful embellishments, has in its essential spirit been found congenial to many later rationalists who

deny
an em
Plato
of co
writin
Plato
into s
to sho
ophy,
very c

In
of err
Sophi
in the
can be
tions.
the ju
none.
then c
not k
partia
the fi
one, li
judgm
other
err fo
has n
object
an err
to me
enoug
"I
but y

deny that knowledge can be imported into the mind as into an empty closet. It would be fascinating to trace the whole Platonic tradition down through the centuries, but that is of course out of the question; for it would necessitate writing a large part of the history of philosophy from Plato's time to the present. In order, however, to bring into sharp relief the *essential* import of the doctrine and to show how vital its spirit is even in present day philosophy, let us cast a glance at but one recent thinker who very clearly exhibits a Platonic influence—Josiah Royce.

In one of his early works, Royce discusses the problem of error in a way which brings to mind the puzzle of the Sophists about the possibility of knowledge and its solution in the doctrine of reminiscence. The assertion that one can be in error, he says, involves one in baffling contradictions. How can one make an erroneous judgment? Either the judgment which is in error has an object or it has none. But "If it had none it was no error. If it had one, then either it knew what its object actually was, or it did not know what its object was, or it partially knew and partially did not know what its object actually was."⁶⁴ In the first case, the judgment must have been an identical one, like *a pain is a pain*; here there can be no error for the judgment can not fail to agree with its object. If, on the other hand, the judgment does not know its object, it can not err for it can not fail to agree with an object which it has not. For a judgment about an absolutely unknown object has no meaning, and can therefore not be said to be an error. But if the judgment knows its object well enough to mean or intend just that object and no other, but not enough to insure agreement with the object, then:

"It is somehow possessed of just the object it intends, but yet does not know in reality what it does intend, or it

⁶⁴ *The Religious Aspect of Philosophy* (Boston, 1885), p. 428.

would avoid error. Its object is in so far as unknown to it, no object for it; and yet only in so far as the object is thus unknown can it be erred about."⁶⁵

Royce expressly refers to the discussion of the possibility of error in the *Theaetetus*, where no definite conclusion was reached, although a valuable suggestion was made in the figure of the aviary with its distinction between actual and latent knowledge. Royce's solution lies in the affirmation of "an all-inclusive, absolutely clear, universal and conscious thought of which all judgments, true or false are but fragments, the whole being at once Absolute Truth and Absolute Knowledge."⁶⁶ As long as the knower is considered as an isolated individual and the object "a thing out there," with no total experience which unifies the two, there can be no such thing as error.

"What then is an error? An error, we reply, is an incomplete thought, that to a higher thought which includes it and its intended object, is known as having failed its purpose that it more or less clearly had, and that is fully realized in this higher thought. And without such higher inclusive thought *an assertion has no external object*, and is no error."⁶⁷

Later in his *Spirit of Modern Philosophy*, Royce attacks a similar problem and arrives at a like solution. He asserts that when one thinks of an object, one not only must have in mind an idea which resembles that object but must *consciously mean* to have his idea resemble that object. But it is impossible to mean, aim at, possess, pick out, or identify what is not in some sense, already present to the hidden self. And just as "the true believer, meaning the truth that he believes, must be in real relation thereto, even so the blunderer, really meaning, as he does, the fact

⁶⁵ *Ibid.*, p. 429.

⁶⁶ *Ibid.*, p. 396.

⁶⁷ *Ibid.*, p. 425.

yond
must
believ
the n
ever,
he is

T
searc
in th
way
the o
proce
in th
of th
reaso
towa

F
expe
illust
Plato
was
seem
of s

68
69
that I
cult to
Rel. A
I inter
even
means
and t
simple
name
escape
sure
don't
You
you e
that,
Did n

yonder, in order that he should be able to blunder about it, must be in so far, in the same relation to truth as the true believer. His error lies in missing that conformity with the meant object at which he aimed. None the less, however, he really did mean and really did aim; and therefore he is in error because *his real and larger self* finds him so."⁶⁸

Thus, Royce's theory of the learning process as a search for meanings which must in some way already be in the possession of the deeper self, states in a different way and from a slightly more subtle metaphysical angle the old doctrine of "reminiscence" that we find is still the process of bringing into consciousness what is essentially *in the soul*, a coming "into her own" of the deeper nature of the self. The soul is "akin" to all reality and for that reason is able to "mean" that reality and to approximate toward its truth.

Royce, furthermore, in a striking passage,⁶⁹ uses the experience of empirical memory to explain, or rather to illustrate, the paradox of the learning process, just as did Plato in the *Phaedo*. It need not be supposed that Royce was in this consciously imitating Plato. Much more likely seems the explanation that there is a feeling tone, a sense of satisfaction, of ownership, of *recognition* in the attain-

⁶⁸ *The Spirit of Modern Philosophy*, pp. 375f.

⁶⁹ *Op. cit.*, pp. 371f.: "So paradoxical seems this final assertion of idealism that I cannot hope in one moment to make it very plain to you. It is a difficult topic upon which I have elsewhere printed a very lengthy research (*The Rel. Aspect of Phil.* Ch. XI.) wherewith I cannot here trouble you. But what I intend by thus saying that the self which thinks about an object, which really, even in the midst of blindest ignorance and doubt concerning its object still means the object—that this self is identical with the deeper self which possesses and truly knows the object—what I intend thereby, I can best illustrate by simple cases taken from your own experience. You are in doubt, say, about a name you have forgotten, or about a thought you just had, but that has now escaped you. As you hunt for the name or the lost idea, you are all the while sure that you mean just one particular name or idea and no other. But you don't yet know what name or idea this is. You try and reject name after name. You query, 'Was this what I was thinking of, or this?' But after searching you ere long find the name or idea, and now at once you *recognize* it. 'Oh, that,' you say, 'was what I meant all along only—I did not know what I meant.' Did not know? Yes, in one sense you knew all the while,—that is your deeper

ment of truth which is analogous to the recall of what has been forgotten—a feeling tone which makes the term “recollection,” as a term for the learning process, an entirely natural and instructive one. Metaphors often express a given meaning more completely than reasoned argument. It is not strange, therefore, that Socrates should designate the paradox of the process of attaining knowledge by the word ἀνάμνησις.

OVIDIA HANSING.

EVANSTON, ILL.

self, your true consciousness knew. It was your momentary self that did not know. But when you found the long-sought name, recalled the lost idea, you recognized it at once, because it was all the while your own, because you, the larger self who owned the name or the idea and were aware of what it was, now were seen to include the smaller and momentary self that sought the name or tried to recall the thought. Your deeper consciousness of the lost idea was all the while there. In fact did you not presuppose this when you sought the lost idea? How can I mean a name, or an idea, unless I in truth am the self who knows the name, who possesses the idea? In hunting for the name or the lost idea I am hunting for my own thought. . . . The escape from the prison of the inner self, is simply the fact that the inner self is through and through an appeal to the larger self. The self that inquires, either inquires without meaning, or if it has a meaning, this meaning exists in and for the larger self which knows.”

Wan

I
tried
ing
emph
know
edge
this
ages
It h
filled
wha
stan
act
thin
heav
ther
the
of m
tion
ren

the
Min
the

WANG YANG MING'S DOCTRINE OF INTUITIVE KNOWLEDGE¹

1. *The meaning of the term (良知) as determined by Wang's usage.*

In his translation of Wang Yang Ming, Henke has tried to differentiate between the various shades of meaning in which the single term "liang' chih" (良知) is employed. He has given us, as its equivalents, "intuitive knowledge," "the intuitive faculty," and "intuitive knowledge of good." To test for ourselves the grounds on which this differentiation rests let us examine two typical passages. The intuitive faculty (良知) is in man's mind. It has pervaded all generations of the immemorial past, filled heaven and earth, and was in no wise different from what it now is. It knows without any cogitation. Constantly and easily it knows dangerous paths. It is able to act without learning. Constantly and easily it knows what things tend to hinder its progress. It strives first for heaven-given principles (天理) and does not trespass them" (p. 292). The description here of "liang' chih" as the organ of general knowledge which is an intrinsic part of man's native endowment completely fitted for its function by nature, immediate and untaught, supports Henke's rendering of "the intuitive faculty." Again Wang says: "In

¹Throughout this study use is made of the dependable translation from the Chinese by Frederick Goodrich Henke: *The Philosophy of Wang Yang-Ming*, The Open Court Publishing Co., 1916. The page numbers in the body of the text refer to this volume.

my work I have used great effort and as a result view the intuitive faculty (良知) as more personal and important than I formerly did. It really is the great root from which grow all human actions and the universal path which all should follow. Put it aside and there is no learning to discuss" (p. 410). This passage well illustrates the difficulty of interpretation. Henke uses the phrase "the intuitive faculty," described as "personal" and "the root" of human actions. However the rendering "intuitive knowledge" would do equally well and would seem to fit in better with the idea of its being "the universal path" all should follow. As a matter of fact we probably have a blending of all the connotations in this passage. "Liang chih" (良知) is constantly identified with "tien li" (天理) "heaven-given principles, or moral law," so that the moral aspect of "intuitive knowledge of the good" is also implied. In addition, it is indicated that in this doctrine, which in its most general aspects we shall call "intuitive knowledge," we have the recognized core of Wang Yang Ming's thinking, the ramifications of which are extensive indeed. It is very clear that the term is also employed as an ultimate principle. We shall therefore be called upon to relate the doctrine of intuitive knowledge to Wang's metaphysics before we have done justice to its implications.

Wang's moral interest appears more explicitly in the following passages, which also show the philosophical lineage of our philosopher's thinking. "The Book of Changes" says, 'Knowing the utmost one should reach it. He who knows the utmost really knows. He who reaches it reaches the utmost.' It is not what later scholars² call 'filling and extending knowledge' but extending to the utmost the mind's intuitive knowledge of good (良知)—the knowledge of good which Mencius calls 'the good-evil mind'

²The reference here is to the school of Chu Hsi, who lived from 1130 to 1200 A. D.

(是非之心) and which all people have. The good-evil mind does not need to deliberate in order to know, nor does it need to learn in order to be able to act. It is for this reason that it is called intuitive knowledge of good (良知). It is the heaven-given nature, the original character of the mind. It is naturally intelligent and clearly conscious. Whenever any purposes or thoughts are manifested, they are all known and recognized by the intuitive faculty (良知). If they be good the intuitive faculty naturally knows. Are they evil? This, too, the intuitive faculty naturally knows" (p. 212-213). Here our term appears as conscience, the maker of moral judgments. That Wang considered this the meaning of his doctrine, of first importance for understanding his teaching, is shown by his statement: "'Liang chih' should be designated as the intuitive knowledge of good, for in this way others will more readily apprehend the meaning" (p. 425). It is further characterized as a norm for guidance in perplexity. "The intuitive faculty is to changing circumstances like the compass to the circle" (p. 316; cf. pp. 442-3, 455-6).

In discussing the relation of intuitive knowledge to thought and reflection, Wang says: "The intuitive faculty (良知) is the point of clearness and consciousness which heaven-given principles attain. For this reason the intuitive knowledge of good is to be identified with natural law. Reflection is the manifestation and use of the intuitive faculty (天理). The reflection of the intuitive faculty in action is naturally clear and simple, for the intuitive faculty is by nature able to know" (p. 287). Over against the type of mysticism and empty meditation practised by the Buddhists for the sake of reaching enlightenment, Wang maintains that "the abstract and pure intelligence and clear realization of the mind are the original intuitive knowledge of good (良知)" (p. 310). This inclusion of the higher

intellectual processes in the functioning of 良知 makes clear that Wang is putting forward intuition as an explanation of how the mind, including reason, works; it is not for him a special type of knowledge with superior claims over against the knowledge arrived at through the discursive reason, as it is for Bergson.

2. *The mind universe of Wang Yang Ming. A monistic idealism.*

The fundamental presupposition of Wang as he approaches the epistemological problem is that man's mind is the key to the universe. "Man is the mind of heaven, and earth; mind (心) is the lord and master of heaven, earth, and all things; mind is heaven. In saying 'mind' you have thereby suggested heaven, earth and all things, and have done it in an intimate, simple way" (p. 425). Again: "The mind of man is heaven and it is the abyss, for there is nothing that does not belong to the original nature of the mind" (p. 154). Wang is able thus to equiva-
 lue mind and heaven because heaven (天) had become identified with the moral principle, li (理) in the Sung philosophy of Chu Hsi which carried through a tendency already evident in the early period of Chinese thinking toward making Heaven a term transcendent and inclusive of the physical connotation. In the quotations above we have three of the philosophical hierarchy of terms whose interrelations in Wang's writings it is important to grasp: Heaven, (天) nature, (性) mind (心); to them should be added a fourth, reason or truth (道).

Of these four, I consider the moral conception of Heaven (天) as most completely transcendent. It is the Confucian "arbitrer of destiny." Life and death are determined by it. Its laws and decrees are to be followed by

every man. It is the source of the immutable moral principles embodied in natural law (天理) or heaven-given principles. This is the usual reference of the term in Wang Yang Ming's philosophy. Heaven is the source of nature (性), which is the second term of the hierarchy. A classic definition of nature is, "That which I have received from heaven is my nature." Mencius regarded this nature as essentially and potentially good in every man. Around this term the battle of moral philosophy then raged down to Wang. The latter took sides with Mencius and with what had become the orthodox view of human nature, for Chu Hsi, in his extended philosophical work on "Human Nature," had identified nature with "li" (理), the moral principle in the universe, and not with "chi" (氣), the material principle. Wang writes, "Heaven's decrees for me are my mind and nature" (p. 301). Original nature then, he regards as the embodiment in man of the cosmic moral law. In discoursing on the meaning of "nature" he maintains: "Benevolence, justice, propriety, and wisdom [the moral categories as given by Mencius] are nature manifesting virtue. There is only one nature and no other. Referring to its form, it is called heaven; considered as ruler or lord, it is called Shang-ti (God); viewed as functioning, it is called fate; as given to men, it is called disposition; as controlling the body, it is called mind" (p. 83).

In this passage Wang has coupled the third of our hierarchy, mind (心), with nature in such a way as to suggest that for him heaven, nature, and mind are interchangeable, all depending upon the aspect in question.

But other passages show conclusively that mind is his more inclusive term. The moral interpretation of heaven involves prior idealistic assumptions which seem to be recognized when he says that this cosmic moral principle

(天理) is the same thing as mind, for "there is nothing in the universe independent of mind" (p. 50; *cf.* p. 358). "Though the mind in one aspect controls merely the body, it really exercises control over all the principles under the heavens." The mind is principles, they are one and the same thing (*cf.* p. 181). Thus in the passages where mind is assigned a seemingly subordinate place Wang will be found to be speaking of mind from the psychological angle. When dealing with the cosmos, mind is made the ultimate principle. The principles of all things, therefore, are not to be found external to the mind, for the mind is itself principles (天理). Upon this his whole position rests. We are justified then in taking mind as the inclusive and interpretative category.

The fourth term, truth, reason, or the path of duty (tao, 道) has a long philosophical history and cosmic connotations. It is often difficult to determine whether it is used in the sense of a cosmic principle or of a way of moral achievement, especially because the two ideas constantly blend. More often than not the double sense is carried through the Chinese writings. Wang is compelled to face this term, just as the New Testament writers did the term Logos. He similarly assimilates it to his own ruling conception rather than being dominated by it, but of course not without some concessions to tradition. He said: "Truth (the path) [道] has no form; it cannot be grasped or felt. . . . When the individual once comprehends, what is there that is not truth? People for the most part think that their little corner of experience determines the limits of truth, and in consequence there is no uniformity in their discussions. If they realized that they need to seek within in order to understand the nature of the mind, there would be neither time nor place that would not be pregnant with truth. . . . The mind (心) is itself truth (道) and

truth is heaven (天). He who knows the mind thereby knows both truth and heaven" (p. 96). Thus by these interrelations, Wang has given us, in Confucius' phrase which he constantly quotes, "one all-pervading unity,"—a mind universe.

We have now to see what place his doctrine of intuitive knowledge is given in this "all-pervading unity." Indeed the intuitive faculty of the mind is itself an expression of this single mind principle. "In heaven and earth, there is but one nature, one principle, one intuitive faculty, one task" (p. 440). "The intuitive faculty makes us acquainted with all things. It is spirit, it is Heaven, it is the Supreme Ruler. It is truly the spiritual intelligent substance of heaven and earth, the mysterious wonderful manifestation of man" (p. 263). With such an interpretation of the intuitive knowledge which rises from man's nature, we are prepared to find it made a principle for uniting all facts of experience into an idealistic mind-universe. Here Wang tries to coerce the stubborn facts of the material world which are opposed to such a theory. In explaining the Great Learning, he writes: "The adult is an all-pervading unity—one substance—with heaven, earth and all things. . . . The benevolent nature of the mind is of this type. It is one with the universe." This is true in a smaller degree of the youth. By the exhibition of sympathy when seeing a child in danger or animals frightened, or plants destroyed, or tiles and stones broken,—he shows that his benevolence is one with all things. They are of the same substance. Even a youth will have this type of mind, which implies a source in heaven-given nature" (*cf.* p. 205). This odd argument is given again in a form a trifle nearer to the Western formulation of the idealistic argument. "The intuitive knowledge of man is the intuitive knowledge of plants and stones. If plants and inanimate objects lack the intuitive

knowledge of man, they cannot be plants and inanimate objects. . . . If heaven and earth lack the intuitive knowledge of good which man has, they cannot exist. But heaven, earth, and all things are *ab initio* one with man. The point at which this great unity (the absolute) manifests intelligence in its highest and best form is called the little intelligence and cleverness of man's mind. Wind, rain, dew, thunder, sun, moon, heavenly bodies, animals, plants, mountains, rivers, earth and stones, are of one structure with man. It is for this reason that the grains, animals and other things are able to nourish man" (p. 168-9). Wang also attempts to answer the mind-body problem. The body is made up of the senses and limbs, but without the mind the body cannot function. The mind, on the other hand, must utilize the body. No mind, no body; no body, no mind, is his statement. His conclusion is that they are a unity which in its last analysis comes back to mind as ultimate (cf. p. 145-6).

The completion of his case for monistic idealism takes on the form of an epistemological argument to which we now pass.

3. *Intuitive knowledge and the knowledge problem.*

To understand Wang's peculiar treatment of the problem of knowledge it is necessary to turn first to the interpretation of a short but all-important passage in the Great Learning which the thinkers of the Sung period had seized upon as offering a logical and practical method of philosophic learning.³ The passage reads: "The ancients who wished to illustrate illustrious virtue throughout the kingdom first ordered well their states. Wishing to order well their states, they first regulated their families. Wishing to

³For the influence of this passage, see Dr. Hu Shih's Introduction to *Development of Logical Method in Ancient China*, Oriental Book Co., Shanghai.

regulate their families, they first cultivated their persons. Wishing to cultivate their persons, they first rectified their hearts. Wishing to rectify their hearts, they sought to be sincere in their thoughts [Mr. Hsu Pao Ch'ien suggests, "to realize their ideas"]. Wishing to be sincere in their thoughts, they first extended their knowledge to the utmost. Such extension of knowledge lay in the investigation of things." Then follows a paragraph which begins: "Things being investigated, knowledge was extended to the utmost." Step by step the argument is retraced up to the highest political consummation in the good order of the state. The point of controversy with Chu Hsi lay in the interpretation of the key phrase "ke wu" (格物), translated "the investigation of things," which Wang contended must be done in and with reference to the mind, and not in external things. But according to both schools the character "wu" (物) "things," is identified with the character "shih" (事) "affairs," true to the dominant humanistic interest in Chinese thinking. So with both thinkers this interpretation led them away from the consideration of physical nature and toward the emphasis of the ethical and practical aspects of knowing. This explains the fact that, when talking about "wu" which is inclusive of physical things, the arguments for the nature and sphere of knowledge are built upon the meaning "affairs." This is well illustrated in a passage, typical of Wang's whole method, in which the relation of knowledge and the idea to "things" is set forth. "The mind originates the idea, and the nature of the idea is knowledge. Wherever the idea is, we have a thing [Mr. Hsu suggests, "the object the idea points to is a thing"]. For instance, when the idea rests on serving one's parents, then serving one's parents is a 'thing'; when it is on serving one's prince, then serving one's prince is a 'thing'; when it is occupied with being benevolent to the

people and kind to creatures, then benevolence to the people and kindness to creatures are 'things'; when it is occupied with seeing, hearing, speaking, moving, then each of these becomes a 'thing'. I say there are no principles but those of the mind and nothing exists apart from the mind" (p. 59). By this fundamental humanistic twist in Chinese thinking, Wang Yang Ming executes a flank movement and, by making his objects largely ideas or activities, gets around the difficulties really involved. Knowledge itself calls for no explanation from him, for "knowledge is the nature of the mind" (the mind's essence). The mind "naturally is able to know" (p. 60). Such knowledge is intuitive and not attained from without.

The question on which he and Chu Hsi split remains to be answered. Are the objects of knowledge and principles external to the mind or not? In reply to this point we get the following: "You have not yet arrived at a full understanding of the principles underlying the investigation of things. How can mind have an internal and external? The task is confined to the original nature and this is *ab initio* devoid of internal and external" (p. 149). (One must constantly keep in mind Wang's interpretation of "investigation of things"—the task—as "the correction of the ideas in the mind to bring out the original intuitive knowledge of the mind.") "Heaven, earth, and all things are within the manifestation, use and activities of my intuitive knowledge" (p. 168). On the whole he pushes aside the question of the knowledge of external objects and insists that the whole and only important task is the extension of the intuitive knowledge of good which belongs to man's nature and is in essence co-extensive with the whole moral truth-structure of the universe. He likens intuitive knowledge to the physical heaven. Whether you get a full view of it or only a glimpse through the ob-

struc
the
"The
bers,
the s
know
prin
the p

I
obje
with
lyse
us o
by f
walk
Wan
they
color
thes
pass
ture
stru
And

V
prob
mod
and
trin
ous
Prac
out
book
the
cism

structions of houses and walls, it is all the same. So with the sage, he only needs to know natural law (天理). "The things of the earth—sacred utensils, measures, numbers, grasses, trees, birds, and animals without number—the sage understands by nature. Why should he be able to know them completely?" (p. 156). With knowledge of principles, it is a simple matter to know the case in which the principles are manifested.

But the relation of knowledge and the mind to physical objects could not escape question even by those sympathetic with his world-embracing idealism. While he fails to analyse the problem of sense perception, his statements remind us of Berkeley's form of the idealistic argument. Asked by followers about the flowers among which they were walking, and about the relation of these to their minds, Wang replied: "When you cease regarding these flowers, they become quiet with your mind. When you see them, the colors at once become clear. From this you can know that these flowers are not external to the mind." In the same passage he says that the senses and the mind have no structure of their own but use the structure of things as their structure. The two, mind and things, are to be identified. And with this answer he leaves the question.

While Wang may not impress us by his grasp of the problem of subject and object, he exhibits a strikingly modern and clear insight into the relation of knowledge and action. After his idealistic world view and his doctrine of intuitive knowledge, he is best known for his vigorous argument for the "Unitary Nature of Knowledge and Practise" (知行和一). Here again is an emphasis coming out of the problems of the time. The tendency to pedantry, bookishness, and debate for its own sake, developed in the followers of Chu Hsi, came in for the sharpest criticism by Wang. He recognised the pedagogical value of

the separation of the terms "knowledge" (知) and "practise" (行) as a corrective to careless action without thought knowledge, but he refused to recognize as knowledge that which was not intimately related to action. In their original character knowledge and practise are one. "No one who really has knowledge fails to practise it" (p. 53). "Knowledge without practise should be understood as lack of knowledge" (pp. 281, 306). Yang Ming further defines the two as only two aspects of the same task which cannot be realized in isolation from one another. The two are related as beginning and end of one process. "Knowledge is the purpose (here "master idea") of the act, and practise is the carrying out of the knowledge" (p. 55). In support of his position, he uses analogies which contain implications of the further relation of action to knowledge which he did not fully utilize, namely that learning comes from doing. In speaking of learning and practice being one and the same thing he gives the illustration of the archer. "He who learns archery must certainly take the bow and fit the arrow to the string, draw the bow and shoot." Thus the beginning of learning is surely practice. So in learning filial piety or in the investigation of any principles leading to the extension of intuitive knowledge, practise is essential. In essence it is all one task and does not allow of separation.

Through this doctrine of the unitary nature of knowledge and practise he indicates the relationship of intuitive knowledge to experience, and so touches on a problem which has bulked large in Western philosophy. The preceding treatment makes it perfectly clear that he regards the knowledge afforded by the intuitive faculty as *a priori*. It is not derived from experience. "The original nature of the intuitive faculty from the very beginning cannot have the least added or taken away from it" (p. 237). But its

proper functioning requires experience for its unfolding, and development by the possessor through the method of "the investigation of things" (rectification of the ideas in the mind). "A person certainly must have experienced pain before he can know what it is. Likewise to understand cold one must first have endured cold." To understand filial piety and respectfulness (to elders) one must actually have experienced them. In such experience the intuitive faculty reacts spontaneously in the right way and affords the appropriate knowledge of the good. Furthermore, in the extension of this intuitive knowledge to the utmost (致知), i. e. in learning its widest application in the affairs of life, experience is essential. The busy life of the official, with his magisterial duties and many affairs, is the opportunity for learning, and for the extension of his intuitive knowledge. "If the unenlightened scholar really is able to investigate carefully the fundamental principles of the mind as experiences come and go and does this in order to develop the original intuitive faculty, though dull, he surely will become intelligent, and though weak, surely will become strong" (p. 309). "Though in the experiences of mutual intercourse of the day there be innumerable beginnings, there is nothing which is not the result of the progressive manifestation of the intuitive faculty. Eliminate the experiences of mutual intercourse and thereby the development of the intuitive faculty is made possible. For this reason the task is one" (p. 288). Thus, while making the most sweeping claims for the adequacy, perfection, and scope of the intuitive faculty in its original purity, Wang recognizes that experience enters into its development and that effort and cultivation are required if the inherent capacities of knowledge are to have their fruition.

4. *Moral aspects of intuitive knowledge.*

As has already been suggested, Wang's major interest is on the side of moral knowledge. So dominated is his thinking by this ethical interest that it has been impossible to avoid dealing with the side of moral intuitions in treating of the other aspects of his doctrine. It only remains to draw together the conceptions which have been emerging and to make explicit the meaning and scope of intuitive knowledge of the good.

The original nature of the mind he considers to be the continuous theme of the Four Books and Five Classics. This nature is the highest good; its original condition is devoid of all evil. It is the embodiment of (or is) moral principles (天理). So, "When Mencius talks about 'exhausting one's mental constitution in order to understand one's nature and heaven' it implies that we are born with knowledge of our duties and carry them out with ease" (p. 57). "The truly filial mind is the root, the many details of duty are the branches and leaves" (p. 52). The highest virtues, he repeatedly contends, are innate to the mind (the mind's essence). So when we thoroughly investigate the moral principles in the mind we know the virtues in their perfection. Love, righteousness, propriety, knowledge, are all original to the mind and not infused from without. "The human mind naturally finds pleasure in the principles of righteousness, just as the eyes take pleasure in color and the ears in sound" (p. 123). The intuitive faculty naturally knows the differences between good and evil, and this faculty and knowledge belong to all men. Thus, not only the sense of right and wrong which Kant put under the "categorical imperative" is native to man's mind, but the moral categories and judgments themselves are all innate, simply awaiting the appropriate situation to rise to consciousness.

Tranquillity is the state in which the original intuitive faculty acts with perfect clearness and certainty. But there are factors which come in to obscure the natural functioning of the moral intuition. These are selfishness and passion or desire. There must accordingly be constant care to keep the original intuitive knowledge of good from the obscuring effect of personal judgments and the stirring of private passion, for "selfish desire increases every day like the dust of earth. If one neglects to sweep for a day, another layer is added" (p. 94). While regarding moral judgments as innate, Wang enshrines the social ethics of China in the structure of his original nature and condemns individual opinion, over against it, as error and evil because it departs from the norm. This affords a strong corrective to a doctrine which might otherwise easily have tended toward extreme individualism. According to Wang's conception, evil is not something original. Our differentiation of good and evil is subjective. "Good and evil are not all in things themselves. They are only in your mind. Obedience to natural law is to be identified with good and the stirring of the passion nature is evil" (pp. 115-7). "That called evil is not originally evil, but consists in exceeding or in failing to realize nature" (p. 157). From the moral point of view, evil is evil; from the metaphysical point of view, it has no reality.

A natural question which calls for philosophic discussion follows from this view of the potential goodness of human nature. How come the differences in attainment among men? How is it that some men rise to the moral heights of the sage and others remain on the common level? The sage is such, Wang replies, solely because his mind is dominated by heaven-given principles and not hampered by passion. The difference in men he likens to the difference in the fineness of metals. It is a matter solely of qual-

ity. Men's dispositions, however, differ. "As regards to the truth (tao) some are born with the knowledge of it; some practise it with natural ease; some know it by study, and practise it from a desire for advantage. The remaining ones surely belong among those who, if others succeed by one effort, must use a hundred efforts" (p. 112). The sage is "a man of unified ability. The point of his ability is just his intuitive faculty. The inability of the common people is due to a lack of extending knowledge to the utmost" (p. 170). Wang delights in using the figure of the metal mirror to illustrate these differences. The mind of the sage is like a bright mirror, the mind of the ordinary man like a dull mirror. When the mirror is wiped and polished it reflects perfectly. However, his emphasis everywhere lies on the common ground between the sage and the common man, on the intuitive faculty which both possess. The only difference lies in the ability of the sage to extend his intuitive knowledge of good to the utmost, while the common people are unable to do so. All possess the same intuitive faculty; and the path and the task are the same. Similarly as regards the differences between youth and adult. These are simply a matter of development. In short, differences in moral attainment (identified with knowledge which is moral in character) are not due to differences in original nature, but to differences in temperament, opportunity, growth and personal effort in the extending of one's moral intuitions.

We have now traced the doctrine of intuitive knowledge in its important aspects. Such knowledge, for Wang Yang Ming, covers the whole knowledge function of the mind—perception, memory, reflection, rational and moral judgments, in so far as these are considered to be true manifestations of man's original nature. From the aspect of the knowing function, we have the "intuitive faculty,"

from
"int
spe
the
of h
is c
of r
and
Wa
be g
des
in i
in c
inn
pos
heig

mo
sho
the
fol
the
fro
stin
oso
det
rat
for
rou

(I
fro

from the aspect of that which is known, we have, broadly, "intuitive knowledge," or, when the moral bearing is more specific, "the intuitive knowledge of good." Because it is the original nature manifesting itself, and the embodiment of heaven-given principles, or ultimate moral law, intuition is certain in its discernment of truth and in its judgments of right and wrong. It is practically identified with mind, and becomes an ultimate metaphysical principle on which Wang builds a monistic universe. In practical life it must be guarded from the obscuration of private aims and selfish desire; and, while the common gift of all men, it flowers in its perfection only when study, cultivation, and practise in daily affairs are brought to bear in order to extend its innate principles to their fullest application. Then the possessor of intuitive knowledge achieves to the lofty heights of the sage.

5. *Some comparisons with Western thinkers.*

(a) In selecting those in the West with whom we may most justly and profitably compare Wang Yang Ming, we should turn to those who occupy an analogous position in the Western development of thought. The Sung school followed upon a general artistic and literary renaissance in the T'ang Period, when Chinese life drew fresh stimulus from Buddhism. In the West, Bacon and Hobbes were stimulated by the renaissance and set new methods for philosophy. The parallel, of course, cannot be followed in any detail. It is at least an interesting coincidence that the rationalists in the West and Wang Yang Ming in China set forth doctrines of intuitive knowledge in succession to roughly similar movements of thought.

The dates of the first of the rationalists, Descartes (1596-1650), are only a little more than a century removed from those of Wang Yang Ming (1472-1529). Descartes,

too, comes to his philosophical method through a revolt against tradition and the diffused learning of his time. He says: "After I had spent some years thus studying in the book of the world, and trying to gain some experience, I formed one day the resolution to study within myself, and to devote all the powers of my mind to choosing the paths which I must thereafter follow." Descartes, stripping himself of the accepted ideas of the time and starting *de novo* bases his whole philosophy on the certainty of the self. His method involves intuition and deduction. He analyzes out the clear and axiomatic principles which at each step of the argument are self-evident, and thus of the same quality as his fundamental axiom, "Because I think, I am." Thus each step in his deduction must be intuited and when seen to be clearly true the resulting judgment takes the rank of an innate idea. Descartes took his stand on the undeniableness of consciousness as directly felt and experienced. There appears therefore to be quite a parallel to Wang Yang Ming. Both men react from tradition and place their dependence on inner certainty. For both, mind (consciousness with Descartes) is fundamental. For both, the truth and certainty of ideas depend upon the recognition of intuition. The differences however are characteristic. Descartes finds the axioms of mathematics and logic most clear; Wang, the truths of morals. Descartes is preoccupied with the mind-body question; Wang is absorbed in a controversy over method and the internality of truth. Descartes has the problem of God and the world to solve; Wang does not glimpse this problem but boldly makes mind as it appears in man co-extensive with the universe.

Turning to Spinoza, we find little in common with the metaphysics of Wang. (A comparison with Chu Hsi would be interesting.) But Spinoza has a place for in-

tuiti
the
mys
that
arri
form
seen
idea
this
is n
The
ease
the

I
bus
thin
cep
fro
tin
in
tha
sta
the
the
but
the
tai
inf
Li
an
tal
ch

tuition at the summit of his metaphysical speculation. In the intellectual love of God one may enter into an almost mystical union with God, whose laws of necessity bind all that is in perfect, if rigid, order. The truths to which we arrive by laborious reasoning may also take on another form, an immediate flash of intuition, in which they are seen to flow from one truth, God. For Wang, though ideas of God or of mystic union were not philosophic grist, this claim for intuition would arouse no question. There is nothing to which the intuitive faculty may not reach. The sage, by the power of his intuitive faculty, would with ease immediately possess the highest truths, identical with the truth of heaven and earth.

Leibniz, like Wang Yang Ming, was a man of the world, busy in the political life of his time and so bringing to his thinking the background of practical experience. His conception of matter in terms of monads, is indeed far removed from Wang's view, yet he regards consciousness as continuous with all reality and as present in a confused form in each monad. His view of knowledge comes nearer to that of Wang. In his *New Essays on Human Understanding*, criticizing Locke, he holds that "the reaction of the mind itself in knowledge is the essential thing. Not that the universal ideas exist consciously in the mind at birth, but that they exist implicitly, involved in the sensations themselves. The mind is already active and disposed in certain directions. Instead of everything being due to the influence of outer objects, there is nothing due to them. Life develops from within by the laws of its own nature, and so sensations themselves are innate. It is necessary to take into account first of all the mind itself with its native character, natural inclinations, powers, and dispositions."⁴

The similarity is even more striking in the field of

⁴Rogers, A. K., *A Student's History of Philosophy*, p. 320.

ethics. According to Leibniz: "There are certain principles native to the soul which cannot be demonstrated, but from which other moral truths necessarily follow. They operate unconsciously in us as instincts, but we may become aware of them. . . . Moral instincts guide men directly and without deliberation, but not irresistibly, for they may be corrupted by passions and by evil habits. . . . Although tradition, habit, and education help in developing such tendencies of the soul, they are ultimately rooted in human nature itself. Attention and method are necessary to bring them to the surface, and even scholars may not be fully conscious of them."⁵ So close is the similarity in both thought and phraseology that one might well believe he were reading a page out of the writings of Wang Yang Ming himself.

As for Bergson, who is a modern exponent of intuition, while minor similarities might be pointed out, the main characteristic of Bergsonian intuition as a prior and superior way of knowing, getting wholes and reality in a manner denied to the analytical intellect, prevents any intimate linking of the two views. Further, the whole development of biology and modern psychology has intervened to alter the method of philosophy and the type of thought. Other comparisons might be of value, as for example the comparison of Wang's idealism with that of Bishop Berkeley. However, holding ourselves to the main theme of intuitive knowledge, the comparisons which throw most light on Wang Yang Ming's ideas, as I see it, are those already made with the rationalists, especially with Leibniz.

(b) Höffding, in his discussion of Bergson,⁶ summarizes the four meanings of intuition in the history of Western philosophy. They are: (1) concrete intuition—such as sensation, memory, imagination; (2) practical in-

⁵Quoted from Thilly's *History of Philosophy*, pp. 374-5.

⁶*Cf. Modern Philosophers*, pp. 229 ff.

tuition—judgment, spontaneous decision, a certitude produced by natural suggestion; (3) analytical intuition—discrimination, immediate knowledge of relations; (4) synthetic intuition—intuition of totality or connection. This intuition Spinoza places at the summit of thought. How nearly does the doctrine of intuitive knowledge in the philosophy of Wang Yang Ming fit into this Western classification?

It is evident that the functions of intuitive knowledge we have been describing very largely correspond to the first two types, to concrete and practical intuition. Sensation, as we have noted, is included in Wang's intuition. And when Wang describes the intuitive faculty by saying, "Now, the intuitive faculty is by nature characterized by quick apprehension, clear discernment, far-reaching intelligence, and all-embracing knowledge" (p. 455), all knowledge processes which we recognize as immediate must be included. There is a possible conscious inclusion of memory as such when it is claimed for the man who has developed his intuitive faculty, that "he is fully acquainted with the past and present." The interpretation here, however, is doubtful. The spontaneous native character of the action of the intuitive faculty very largely corresponds to this first head. The side of moral knowledge prominent in Wang's views seems to be covered by the second type suggested, the practical intuition. It knows without cognition. Constantly and easily it knows dangerous paths and what tends to hinder its progress. "The intuitive faculty immediately recognizes whether the thought purposes which are manifested are good or evil." The third type of intuition, referred to as analytical, I understand to apply especially to intuitions of logical relations. Now the forms of knowledge and categories which were held by Kant to be *a priori* were the outcome of a high development in the

West of the study of logic. China has never developed intellectual logic. Her logic has been a practical and ethico-social discipline which has often seemed to us to be not logical at all. It is not built on the necessities of pure thought but on the necessities of life in a social order developed along its own characteristic lines. There were times when logic as logic received attention, as in the work of the Neomohists and Hsün Tzu, but the doctrines of these scholars were not followed up in the post-Chin period. Wang was not interested in the problems of pure logic as such. However, since he clearly includes the functions of the intellect in intuitive knowledge, the immediate discrimination of relations may also be said to be implied in his doctrine. One might therefore also expect some examples of the fourth type of intuition, synthetic intuition. I believe Wang did recognize this aspect of intuition. The intuitive faculty when extended to the utmost gives us a single principle, a whole world. Wang repeatedly gives explanations in which he unifies the whole of life, and does so by means of intuitive knowledge as the center and organizing principle of the mind. The world of moral duty is unified through the same means. The synthetic intuition or judgment which comes at the end of the more detailed processes of study or thought is also recognized. "When you cannot think coherently do not immediately cease thinking, for there should be points at which you suddenly understand" (p. 344). The intuitive faculty "is quite naturally the point of clear realization" (p. 441). And thought, the constant requirement of method and study to secure the fullest functioning of the intuitive faculty seems to call for the recognition that the intellectual process which culminates in the synthetic judgment was part of Wang's own view.

We conclude, then, that Wang's term and doctrine do not correspond directly with any of the recognized mean-

ings of
all of
cation
analy
and p

6

(

Wan
the c
prac
with
the
that
real
has
it, a
will
its
ten
His
act
of
low
an
mo
to
to
ing
lea
ea
of
go
th

ings of intuition in the West. On the other hand, nearly all of the elements called intuitional in Höffdings classification are present in Wang's doctrine. Least evident is analytical intuition; most clearly apparent are concrete and practical intuition.

6. *Evaluation of Wang's doctrine.*

(a) Turning first to its weaknesses, we find that Wang's exposition of the intuitive faculty suffers from the extravagance of his claims. When intuition is made practically identical with mind, with moral principles, and with cosmic truth and reality, confusion is inevitable in the formulation of its functions. Wang himself confesses that he finds it hard to explain what intuitive knowledge really means. He weakly adds, "Since everyone by nature has the intuitive faculty, it is merely necessary to mention it, and even the most simple-minded and the most depraved will realize what it is. But in the matter of determining its meaning in the fullest sense, even the sage with his extended knowledge is certain to be disappointed" (p. 418). His excessive claims, and the absence in that period of exact scientific knowledge, whether of the physical world or of mind, and the further lack of experimental methods, allowed him to draw conclusions from strange arguments and to make strange identifications. Further, in epistemology, the subject-object problem suffers from a failure to analyze sense perception. His external world is too hazy to satisfy the demand for the reality of objects. When dealing with this question his answers would seem logically to lead to solipsism. "I made inquiry saying, 'Heaven, and earth, spirits, gods, and things have existed for thousands of years. Why should it be that when my intelligence is gone they all exist no longer?' The teacher said, 'Consider the dead man. His energy and intelligence have been sep-

arated. Where are his heaven, earth, and things?" (pp. 184-5). The case of the flowers, referred to above, leads to the same conclusion. Not only the knowledge of the flowers, but the flowers themselves are described as internal to the mind. However, because knowledge of external objects and knowledge of truths are never clearly differentiated, Wang always comes, for the justification of his theory, to the moral aspect of knowledge drawn from social relations. Thus he escapes a solipscism,—not by answering the epistemological problem, but by unconsciously shifting to the field where his case is naturally stronger.

In the field of moral knowledge his method of the extension of knowledge of the good by the rectification of ideas and the elimination of selfish aims, constantly faces the peril of subjectivism. His disciples are repeatedly ensnared in the difficulty of "investigating things" while in the midst of the duties of an active life. Introspection and self-examination seem to them to demand abstraction and retirement (pp. 249, 290, 308). Wang's answers are not always convincing. Since the intuitive faculty and heaven-given principles are the same, and since principles cannot be affected or moved by the stress of affairs, so, he contends, the original nature of the mind is not to be affected by these external matters. The conclusion is that in the learner's mind there must be lurking some desire which is obscuring his original nature and interrupting his investigations. One is drawn to sympathize with his disciples as they flounder around in the inherent difficulties of a subjective method in moral progress. Wang also shares the typical Confucian illusion that, in moral matters, knowledge is the complete and adequate dynamic. What makes men go against the promptings of conscience? He can only say that such men do not really know. This implies that he failed to carry on "the investigation of things." The

teacher said, "In case the individual really knows the secret of intuitive knowledge, no matter how many thoughts he has that are depraved, corrupting, and useless, they will all be dissipated when intuitive knowledge becomes aware of them" (p. 189). However, Wang's doctrine of the unitary knowledge and practise went far toward correcting these intellectualistic and subjectivist weaknesses in his doctrine of moral knowledge.

Throughout his work, our philosopher labored under the disadvantages involved in the "proof-text" method. Just as this method confuses the thinking of Christians when applied to the Bible and prevents them from making the most of new truths which they have really acknowledged, so it keeps even so free a thinker as Wang Yang Ming in constant bondage to the classics. The bulk of his writing is given up to interpreting the phraseology of the Four Books, so that they will fit into his scheme. This produces artificiality and loads his distinctive ideas with old terms and associations, preventing a clarification of his thought, and keeping him from achieving the creative work of which he was really capable.

Much of our criticism should legitimately be written off to differences between Western and Chinese modes of thinking, and to the limitations of the times in which Wang lived as a matter of fact. Wang on the whole compares very well in the reasonableness of his ideas with the pre-scientific rationalists of the West who were actually later than he by one or two centuries. Since Western philosophy has been so largely concerned with the theory of knowledge and has repeatedly taken the subject-object and mind-matter problems as the organizing centers of its thought, while China on her side has turned to social morality as its chief theme, it is hardly fair to task Chinese philosophy too heavily for failing to handle the former problems. Whether

these are more truly the task of philosophy than the problem chosen by the Chinese, is fairly open to question.

(b) Wang Yang Ming, we would point out in conclusion, has much to call forth our approval and to merit wider study. He has both an instinct and a method for securing unity in the life of the individual and in the world of experience. It is delightful to read the passages in which he cuts through the maze of terms abounding in Chinese ethical and social discussions to show what is really at their bottom. He is insistent on the unity of the mental life, and often exhibits great skill in relating the many aspects of experience to the central unity of the self. It is extremely important that a man should achieve a unified attitude toward life, and such principles of conduct as free him from the minutiae of rules and particular cases. Wang's suggestion to this end is his doctrine of intuitive knowledge. "That which regulates man in serving prince, selecting his friends, loving the people, and regarding things highly; that which regulates him whether acting or resting, whether speaking or quiet, is just the development of the intuitive faculty, which bears in mind filial and fraternal relations, and which is truly sincere and sympathetic. Under such circumstances, nothing arises which is not in harmony with the path of duty (tao)" (p. 443). "The underlying principle is one." This he illustrates in relation to all the steps in the task of moral learning as outlined above (*cf.* 374-5).

Wang was the first Chinese thinker to realize the prime rôle of mind in the universe. We have noted the weakness in his conception of the physical world, but this should not unduly discount for us the positive contribution of a thinker who could bring into the synthesis of the concept "mind," the more abstract ideas of moral law or principle (理) and the still more ambiguous "tao" (道) which other Chinese

thin
And
prop
over
ever
reco
nev
that
mor
gor
stru
Ada
Mo
are

ous
obs
mo
Wi
wa
anc
ner
per
per
rea
per
his
is
his

or
qu
str
tiv

thinkers had made final in their view of the universe. And while the categories of benevolence, righteousness, propriety or social decorum, and wisdom, are taken over uncriticized from traditional Confucianism, and while even their seemingly spontaneous rise in the mind was not recognized as in fact a result of social inheritance, there is nevertheless something to be said for Wang's contention that these are principles inherent in the cosmic and human moral order and are the mind's structure. That such categories of thought and judgment as love, justice, fitness are structural to reality is a doctrine to which a modern idealist, Adams, and in a different form, neo-realists like Spaulding, Montague and even Russell, in their doctrine of universals, are giving their support.

Again, Wang's emphasis on intuition as the spontaneous manifestation of the original nature, when cleared of obscuring faults, gives rise to a freedom and inwardness in morals which were greatly needed in his day as in all times. With this goes an emphasis on personal experience. This was a vigorous protest against the prevalent externalism and bondage to tradition. The appeal to principles, to inner certainty, to the spirit of the sages, and to personal experience are reminders of the perennial revolt of prophetic persons against scribalism and tradition everywhere. The reading of Wang's biography reveals the remarkable independence of thought and action which characterized him in his personal capacity as a high official. The same quality is found in his writings as well, in spite of the limitations of his proof-text method.

When Wang went back to Mencius for his doctrine of original nature he also recovered the unique democratic quality in Mencius. Indeed this democratic impulse was strengthened through the fact that Wang explored intuitive knowledge, which, like the potential goodness of nature,

was ascribed to all men, into an all-inclusive doctrine of mind. It is the same mind in everyone, common man and sage, youth and adult. In all, it has the possibilities of development to the utmost. Out of these qualities of inwardness, freedom, independence, and democracy, comes a marked moral power. Evidence of this is to be found not alone in Wang's writings but even more in his life, and his influence upon his followers and the region where he made his home.

Strangely enough, however, his most marked influence has been in Japan. There, under the name of the Oyamei or Yome school of Confucianism, his teachings flourished in the period of the Shogunate, 1602 to 1868. His followers, though few in number, were men of great influence. Among them was Admiral Togo. These leaders were stimulated to activity and high personal morality by Wang's teaching. Indeed the latter may be said to have furnished the inner preparation, as did the coming of Perry the outer stimulus, for the great reforms which initiated modern Japan. Wang's teachings of the unitary nature of knowledge and practise in morality, and his insistence on practical life as the proper arena for the development of intuitive knowledge to the loftiest point, were well calculated to further the active life of reform on which his Japanese adherents set out.

In view of this fact it may be asked why Wang Yang Ming has not found greater acceptance and proven more influential among his own countrymen. This is a difficult question. The most likely suggestion, perhaps, has come from the pen of Dr. Hu Shih. This writer has discussed the contribution of the two methods of the "investigation of things" to the development of logical thinking in China. He fully recognizes the merits of Wang Yang Ming and the reason for his reaction from Chu Hsi's method of arriv-

ing a
(理)
was
exper
the a
Hu S
terpr
for w
metho
world
the m
Yang
withi
subje
objec
sophi
peal
view,
to tra
time
ment
accep
the h
varie
witne
ophy.

ing at truth through extensive investigation of the "li" (理) principles in all things. Chu Hsi's inductive method was rendered barren because it lacked the element of experimentation; moreover, there was no recognition of the active and directing rôle of mind. Nevertheless, Dr. Hu Shih concludes, the Sung school was right in their interpretation of the "ke wu" (the investigation of things), for when corrected by the use of an adequate experimental method and the recognition of "things" as applying to the world of physical objects, the method of induction must be the main way of really extending our knowledge. Wang Yang Ming, shutting himself up to the discovery of truth within his own mind, committed himself and others to a subjective method of intuition without proper relation to objective tests. I think this is probably the main philosophic reason why his teaching has not made a larger appeal to the Chinese mind. From the historical point of view, it would seem that the strong discipline of adherence to tradition, which had become so firmly established by the time of the Ming dynasty, must have been largely instrumental in curtailing Wang's influence and blocking a wider acceptance of his ideas. With the modern discovery that the heritage of Chinese thought is much broader and more varied than the orthodox Confucian stream itself, we are witnessing a new awakening of interest in Wang's philosophy.

LYMAN V. CADY.

SHANTUNG CHRISTIAN UNIVERSITY.

THE DEVELOPMENT OF METHODS IN SOCIOLOGY

ALL of the methods now used in sociological investigation and generalization were to be found, at least in embryo, among the Greeks of the age of Plato and Aristotle. In this paper I shall not attempt to go back of some sort of a conscious attempt at critical thinking on their part. We may start with Socrates whom we may take as the greatest of those sophists who were attempting to give to the process of thinking and generalization some sort of rules which would guarantee a reasonable degree of dependability to ideas and would at the same time afford some test of the accuracy of the philosophic contentions which were encountered in private conversation and political propaganda and religious and social discussion. Socrates, at least, had a civic motive in the development of methods of testing the truth of ideas. He was essentially a critic, but rather of theories than of institutions. In showing the citizens of Athens the unsoundness of their notions about society he also made himself a critic of their society itself.

I. The Socratic method was that of definition of ideas and testing of assumptions by a process of elimination of error. The assumption was that if an idea or proposition contained an essential core of truth it could be revealed by a process of "peeling." This Socratic assumption regarding method cannot be understood by our

relatively scientific age unless we recall the Platonic distinction between the idea and the representation, the noumenal and the phenomenal, which was also held by Socrates and all metaphysicians of the time. Truth for them is not a human or social product (although some of the sophists had arrived at this conception in saying that man is the measure of all things), but emanates from *Nous* or natural law (from the gods, according to the theologians of an earlier day) and imposes itself upon the human mind or reason, perhaps by a process of infiltration, known subjectively as intuition. But all human and earthly (phenomenal) extensions of the universal truth were imperfect, that is, contained error, and were more or less distortions of the noumenal or perfect original.

These imperfect copies of the perfect ideas reached man variously. Usually they came by way of tradition, or from the ancestors. This fact sanctified them in the minds of the superstitious, but not so to Socrates. Being a metaphysician rather than a theologian he did not believe in revelation. To his way of thinking the ancestors must have first come by these imperfect ideas in the same way he and others arrived at new or original ideas, that is, through their "reason." But what Socrates meant by "reason" is not what we mean by that term. We would conclude that Socrates must have arrived at his new ideas by some sort of random induction from cases, or by reasoning by analogy, or by deducing a minor proposition from a major one, that is, by some now commonly used logical process. But to Socrates the "reason," sometimes used interchangeably by him for his "daemon" or "guiding spirit," was a sort of assimilative organ or personality lodged in his body (brain or heart) for the reception of infiltrations from the *Nous* or natural law without. We may see remnants of this notion surviving to this day

in such concepts as free will, the Virtues, the Vices, the instinct for truth, conscience, etc.

But none of these emanations from *Nous* through the organ of "reason" were as perfect as the original idea, whether they came directly to one or through his ancestors. Man, himself imperfect, could scarcely receive perfect extensions of truth. The problem Socrates set himself was to develop a method of refining these imperfect ideas, of eliminating from them the elements of imperfection which they contained. He was not without precedents in plenty. The Greeks, like all other early peoples, were familiar with methods of augury, of reading from heavenly signs, chance happenings, entrails of animals, lots, oracles, etc. While Socrates was not above believing in such spiritistic or theological methods of choosing among ideas, he was advanced enough to seek a more intellectual or logical procedure of testing propositions, one which would utilize his principle of "reason" itself in refining the universal emanations from *Nous*. The dialectic method was merely that of clarifying concepts and propositions by defining them in speech terms, of finding equivalent descriptive terms, and then of setting the propositions over against each other for purposes of comparison. If there was contradiction there must be readjustment and restatement. Thus, finally, the core of truth would remain after the process of elimination or "peeling." Crude as was this logical method, in the hands of a keen controversialist and clear thinker it produced remarkable results. It gained the hearty approval of Plato and of many other followers who used it. It marked the greatest advance in critical thinking up to that time.

But it had many defects. It had no definitely formulated rules of procedure, and Plato was not the man to add these to his master's method. It therefore depend-

ed for
tellect
fool
the e
whos
an un
Anot
that
to ga
to te
pothe
whic
folk

I
to su
out
pose
prop
syll
cret
mor
diat
com
is a
mai
Ari
pro
of
neg
be
is a
ma
ger
me

ed for its utility primarily upon the keenness and the intellectual honesty of its users. It was in no sense either fool proof or knave proof, as is abundantly attested by the employment made of it by some of the other sophists whose lack of intellectual honesty or acumen has caused an unsavory significance to be given to the term "sophist." Another great disadvantage of the dialectical method is that it is almost wholly negative. It did not undertake to gather data and to generalize them, but limited itself to testing the accuracy of or discovering the truth in hypotheses or beliefs which had already been formulated and which, perhaps, had come down from the past where the folk mind had created them.

II. It was the work of Aristotle to make an attempt to subject the dialectical method to rules, and in carrying out this attempt he created formal logic. For this purpose he employed the syllogism with its major and minor propositions, and its deduced conclusions. But even the syllogism remained a negative method, one of testing concrete and immediate practical propositions in the light of more general and remote propositions to which the immediate practical propositions are submitted for purposes of comparison. John is shown to be mortal only because he is a man and because all men are mortal. The method remains the same as in the hands of the sophists except that Aristotle has formalized it, has made rules to guide its procedure, and has thus made the steps in the comparison of propositions stand out more clearly. But it is still a negative method. Each more immediate proposition must be traced back to a more remote one, the truth of which is assumed. It contains in itself no method of testing its major propositions. Neither can it build up a method of generalizing particulars into universals, the essential element in inductive method.

But the genius of Aristotle was equal also to this more positive task, at least in practice, if not in theory. Aristotle's *Politics* contains abundant instances of all of the methods of positive generalization since used, except that by exact or formal statistics. Of course the application of these inductive methods was limited by the data which he had at hand, but the forms are there, although they are not named as we name them. Informal statistical generalization—drawing general conclusions informally from numerous observed similar instances—occurs repeatedly, especially in connection with his conclusions drawn from his studies of various ancient constitutions, of the location of cities, the sequence in the evolution of communities, the fundamental relationship of inferior and superior, domestic organization, the forms of government, and numerous other items of theory. The case method is also frequently used, although he has no explicit theory of the case method. Not infrequently, in common with many other ancient and modern writers, he erects the striking case into a type. This he unquestionably does when he speaks of the advantages of the location of a city a few miles from the coast, which was so conspicuously the case with Athens. In a sense he made every constitution a case, but he generalized his cases by a sort of informal statistics into universal principles. If at times he drew general conclusions from a single case without checking on it with a sufficient number of other cases, it can scarcely be said that he was different in this respect from many present-day writers who have not come fully to perceive the true function of statistical generalization and correlation, which is, of course, to prevent the striking case from being inconsiderately erected into a type.

Aristotle drew his data for inductive or positive gen-

eraliz
ciety,
relati
gathe
—his
ous
than
with
grea
Aris
and
mur
ples
tive
Her
data
mu
uni
use
ind

ran
su
so
fo
ci
ex
sc
av
op
O
co
co
iz

eralization from history and from contemporaneous society, just as we do. There is even some use, although relatively inexact, of anthropological data. Facilities for gathering data for social generalization from the sources—history, archeology, anthropology, and contemporaneous society—were much less adequate in Aristotle's time than they are at present. And yet we must admit that, with the possible exception of history, they were not greatly improved for some fifteen hundred years after Aristotle's death. His close connection with Alexander and the fact that he lived in an age of striking intercommunication, especially through conquest, among many peoples perhaps gave Aristotle better facilities for comparative study than any other Greek writer possessed. Only Herodotus can compare with him in this respect, and the data of Herodotus and the uses he made of them are much less exact. It is not surprising that in an age of universal hostility among peoples there should be little use of dependable anthropological data for purposes of inductive generalization.

The attempts of Aristotle to use data of contemporaneous events are much more numerous and visibly more successful. But even he had not yet learned to describe society in its subtle details and in terms of its underlying forms and principles in that manner which marks off sociology and social psychology from the more obvious and external social sciences such as economics and political science. Mankind lived countless ages without being aware that they had customs, traditions, beliefs, public opinion, and comparable forms of collective behavior. Only slowly were the habitual forms of behavior which centered in relationships rather than in personalities or in ceremonies and rituals sufficiently objectified and verbalized that it was possible to label and record and count and

generalize their occurrence into laws of sociology and social psychology. That time had but imperfectly arrived in Aristotle's day; and the method has flowered into a social science, or into social sciences, only within the last two or three generations. Those facts of his time which were fairly obvious Aristotle saw and recorded and generalized, and much of his *Politics* and *Ethics* is based on such contemporaneous sources.

But it has been said correctly that the society, especially the political and institutional organization, which Aristotle saw and generalized belonged to Aristotle's immediate past rather than to his own age. He shows little or no understanding of the tremendous changes that were going on in his time. Most of his political generalizations are drawn from the constitutions and governments which had already passed out of existence or were in process of decay. So, after all, his chief source of data for generalization was historical. Doubtless he suffered from the same limitations that all students of society are subject to, the difficulty of getting sufficient perspective of contemporary events to frame (generalize) them into descriptive principles and laws. Or, to put it in another way, it is exceedingly difficult to hold all of the contemporary facts in a changing world, like the dynamic present, in such a constant and static relationship one to another that they can be seen and generalized as unit processes. For this reason the historian does not like to come too close to the present. The further back he goes in his search for data the more likely he is to find them subjected to a sort of artificial selection and compression, due to the fact our perspective upon the past has made it into a static world. Of course this artificial selection and definition of the data of the past according to our conventionalized viewpoints from the present render these data less vital and significant in reconstruct-

ing this
not yet

Th
occurr
His m
of it, s
tive o
covere
not u
gener
static
such
types
haps,
tory
rive
cal c
sion.

F
tion
is to
by a
pora
or l
than
and
its
him
tem
ove
of
plo
soc
an

ing this world, but that is another story, and one that has not yet come to trouble the orthodox historians.

There is no reason to suppose that such a problem ever occurred to Aristotle. He took his history as he found it. His most striking difficulty was that there was not enough of it, so little in fact that he could not easily secure perspective of human events. It is worth noting that, although he covered practically every other field of knowledge, he did not undertake to write a history of mankind. Also his generalizations are for the most part made for a fairly static society; but those covering successions of events, such as the theory of revolutions and of the successive types of communities, are not wanting. Even here, perhaps, his method was to take conspicuous cases from history and erect them into universal types rather than to arrive at his types from the comparison or informal statistical correlation of a great many cases in historical succession.

Further evidence of this incompletely scientific utilization of the data of history for purposes of generalization is to be found in the fact that he is constantly reasoning by analogy from the single case in history, and in contemporaneous society, interpreting it more in terms of its more or less superficial resemblance to some other single case than by assimilating it to a large number of similar cases and testing it in terms of the numerical predominance of its occurrence. Perhaps no other procedure was open to him in an age before vast collections of historical and contemporaneous data had been made and defined. It is, moreover, but the same crude analogical procedure which some of the less critical exponents of the case method yet employ when they attempt to interpret the facts of human society by analogy with the cases which they draw from animal and plant communities.

III. Historical data, or the historical method, was first consciously used to support hypotheses which had been arrived at unconsciously or which had come down as traditional beliefs. Evidences of this contention are numerous and various. Again and again the Hebrew writings illustrate a doctrine by citing a historical or apocryphal case. Plato illustrates some of his most pointed moral teachings in this way. Augustine's *City of God* employs the method constantly. It is still one of the favorite methods of the casuist to employ history to support a preconception or a theory by an appeal to historical data. Within limits it is a justifiable procedure, although it is always a negative method, and ceases to be tolerable when facts are discovered which contradict the theory. Sometimes these exceptional facts are waved aside with the statement that they are the exceptions which prove the rule. This is certainly an absurdity in any except the statistical sense that the statistical formula never exactly describes the concrete data, since all facts are individual and particular or special, and the statistical formula is only an approximation curve. The historical data which are thus called upon to support a hypothesis are usually striking cases which are imputed to be typical. The early social thinkers did not scan the whole field of history and generalize it for such a purpose. The application of the informal statistical, as distinguished from the case, method to history in the support of sociological hypotheses belongs more especially to modern historical research. And even here the method is, of course, not in perfectly good standing. The accepted rule is that historical generalization should be as spontaneous and unpremeditated as possible.

The attempt to generalize history into some perspective, to discover trends and stages, as distinguished from the method of taking an illustrative case here and there

to support a preconception or a dogma, was already visible to some extent in Aristotle. St. Augustine has his stages of old testament history approaching to a reign of grace. Dante, Ibn Khaldun, Machiavelli, all and increasingly, generalized logical sequences or trends into history and decreasingly used history as a fund of distorted cases to illustrate and support hypotheses. The explanation of this growth of logical method in history is of course the growing volume of historical data. Also, as people got farther away from the histories of Rome and Greece they succeeded more and more in standardizing and stereotyping their data. In this way the facts themselves became static and relatively unchanging and thus capable of being held fast and viewed in a constant perspective or process. Volume and fixity (dependability) of historical data thus made it increasingly possible to see trends in history, i. e., to generalize it into principles or laws, according to informal statistical procedures. The imputed curve, as well as the event or case, in history thus began to appear.

It is to Vico that we owe an explicit statement of this method of detecting logical sequence and continuity in history. In his *Scienza Nuova* he clearly stated the proposition that historical data can be used for the purpose of generalizing social (sociological) principles and laws. In his opinion history is the overt behavioristic expression of the mind of God, which is made manifest in historical events. In order to know the mind of God, which was formerly revealed in the laws given to Moses and the prophets, it is now necessary to study the data of history and erect these into principles. As a believer in natural law, the successor of the old *Nous*, the logic of history became for him the legitimate successor of revelation. This is not a new philosophy, but is in reality the metaphysical logic of St. Thomas applied to the interpretation of the

data of history. Nevertheless it is the first statement of the theory of inductive generalization from historical data which approximates the modern statistical method. Of course Vico had no mathematical conception of historical generalization. There were not sufficient comparable data from history to make this conception possible. Mathematical statistics had to await the abundance of social data which was first available with the study of contemporaneous data in very recent times. But his professed method may, I think, very properly be denominated as informal statistical, although he never heard the term. His actual aim was to plot the curve of history, which is another way of saying that he was attempting to look logical perspective into a fairly adequate body of historical data now available for the first time.

Vico was but the beginner of this explicit and self-conscious method, which is also the forerunner of early sociological method. Turgot, Voltaire, Rousseau, Montesquieu, Condorcet, Herder, Hegel, and numerous others carried forward and sometimes improved the technique of generalizing sociological principles from historical data. But all of these worked within distinctly metaphysical conceptions and backgrounds. In Saint-Simon and in Comte the metaphysical as well as the theological presuppositions of the method were discarded in principle. The earlier philosophers of history had appealed from a personalistic and fiatistic interpretation of historical data to universal and naturalistic principles. They lifted the isolated case out of its fiatistic and personalistic character and imputed to it typical and universal value. They went further, from the time of Vico on, and sought to bury the case in the type. They sought to get back of the particular and imperfectly phenomenal to the perfect and universal principle or idea, and they sought to do this through a study and

compar
or data

The
and P
the lat
new m
lectic i
differ
as the
of con
assimi
pariso
and th
as it v
inator
histor
tive s
grow
conce
or le
Com
to m
meta
this
doctr
today
lator
stag
of e
form
over

1
Socio

comparison and harmonization of the concrete phenomena or data themselves.

The similarity of their metaphysics to that of Socrates and Plato is obvious, however much more sophisticated the later statement may be. Also, the similarity of the new method of synthetic generalization to the Socratic dialectic is almost equally obvious. But there is one striking difference in emphasis between these two methods. Whereas the earlier one is negative and eliminative on the basis of comparison, the latter is constructive and inclusive or assimilative on the basis of comparison. Both use comparison, but the one seeks the least common denominator and the other the largest common denominator of the data, as it were. It is this latter change in the common denominator which renders the method of the philosophers of history capable of serving the ends of a largely constructive synthetic and inductive generalization. Also, it outgrows gradually its servitude to the bolstering up of preconceptions and dogmas and seeks to be a means to more or less spontaneous generalization. It remained for the Comteans and the critical German historians to attempt to make of the historical method a procedure without metaphysical preconceptions. They did not really achieve this end, nor are the implications involved in the positivist doctrines fully clear to all historians and sociologists even today. They certainly were not to Comte, their formulator.¹

The philosophy of history, with its emphases upon stages and sequences, first introduced the definite concept of evolution in human affairs, although this concept was formulated in terms of the concept of progress. Moreover to the philosophers of history progress was an inevi-

¹ See "Scientific Method and Social Progress," *American Journal of Sociology*, July, 1925, for a discussion of some of these implications.

table, metaphysical process, imposed upon mankind by the nature of the law of the universe. This was a very different concept of evolution from the scientific one which has more recently dominated our thinking, in which there is nothing of inevitability or external imposition. Thus, the definite concept of evolution was applied to human affairs before it was extended to the lower organic and to the inorganic worlds. In a similar manner, it may be remarked, the concept of relativity was prevalent in the discussion of moral and social affairs long before it was applied to physics. The fact that the theory of relativity has recently been given a more definite mathematical formulation in mechanics has served to obscure the fact that the idea was earlier current with respect to social phenomena, and was itself a product of historical comparison.

The imperfections of the historical method, or the inadequacy of historical data, as a source of sociological generalizations, gradually became apparent in the nineteenth century. It was recognized that the number of cases available for generalization was insufficient for purposes of affording a true sample. The authenticity of the data was not always beyond question. The data themselves had been selected by their recorders, usually from a partisan or prejudiced standpoint, with the result that only one side of the story was known. The limitations of insight of the recorder often prevented his noting the more subtle and less striking, but often the more important, factors in the situation, so necessary to the sociologist. For this reason Vico largely neglected the chronicles of kings and turned to a more fruitful analysis of ancient literatures for his data. Closely related to these difficulties was the fact that all history in the past was written, however honestly, from the preconceptions of that time, while the philosophers of history must inevitably interpret

and g
as be
artifi
in ex
static

S
ous
ninet
tiated
and c
rigor
used
the c
icism
of al
never
who
ciolo
centu
bega
eolog
centu
of f
and
rane
sour
sider
turn
the
been
to in
J
cedu
alize

and generalize from the preconceptions of their time. And, as before suggested, historical facts attain to a degree of artificial rigidity that largely incapacitates them for use in explaining dynamic processes. They become dead or static, while the social philosopher requires living data.

Such difficulties as these led to the search for numerous remedies. The so-called scientific historians of the nineteenth century, especially of the German school, initiated a movement to collect vast quantities of documents and data and to test the accuracy of these with the most rigorous possible criteria. Likewise various devices were used to correct distortions and limitations of viewpoint of the older chroniclers. Out of these grew the higher criticism, which ultimately came to pervade the interpretation of all documentary sources. But these rectifications were never wholly successful and there are now few historians who believe that their data are adequate to complete sociological generalization. It was also in the nineteenth century that the search for adequate and dependable data began in earnest to go beyond historical collections. Archaeology and anthropology had arisen by the middle of the century to serve as supplementary sources, and the rise of formal statistics in this same century made possible and popular the utilization of vast masses of contemporaneous data for purposes of generalization. These newer sources of data for sociological generalization will be considered in their turn; but for the present it seems wise to turn aside for the purpose of indicating more adequately the uses to which the case and statistical methods have been put in the past and may be put in the future as aids to inductive sociological generalization.

IV. The case and statistical methods are the two procedures by means of which data are collected and generalized sociologically. They are supplementary rather than

antagonistic. The case method corresponds roughly to the laboratory experiment, except that the social case describes situations as they are, while the laboratory case describes conditions under artificial controls. Even here there is no essential difference, except that it is usually difficult to subject the social case to a high degree of artificial control and thus eliminate unmeasurable or disturbing factors. In the experimental laboratory it is frequently possible to eliminate through artificial controls the unmeasurable and irrelevant factors and thus to construct a definite and accurate formula for the behavior of inorganic and even organic bodies within the artificial environment thus selected for them. One of the best examples of this sort of control and measurement is in the case of the law of falling bodies. The control of the environment is so perfect in the vacuum that a highly accurate formula for falling bodies *in a vacuum* has been constructed. The sociologist also studies human behavior in highly controlled environments and secures fairly predictable results for behavior *under those conditions*, when repeated, but when he comes to study whole groups of individuals behaving in their ordinary manner in their ordinary social environment it is not possible to control or standardize all of the environmental factors. Hence it is difficult or impossible to measure them directly and simply, and the statistical method must be employed as a means of isolating and holding constant the factors, for purposes of measurement. The social or group case study is, therefore, much more nearly comparable to an ecological or symbiotic study of lower organisms, or to a study of a geological formation or geographical area, than it is to the measurement of the behavior of physical bodies in a laboratory.

However, the case method of interpreting social phenomena has long been used, is in fact very primitive. As

indic
supp
new
as t
trag
The
Sinc
in th
such
polit
erali
vior
dom
less
case
were
a wh
wher
their
case
the
cons
ogra
tory
hav
wher
the
tice

pos
said
of p
this
gro

indicated above, it was first employed to illustrate and support propositions and dogmas rather than to arrive at new hypotheses inductively. In this way social cases, such as the parable, allegory, vision, revelation, myth, story, tragedy, novel, have been used from the earliest times. The earliest literatures show abundant examples of them. Since social science, like all other sciences, had its origins in the practical problem of control it is to be expected that such cases should at first have been used for moral and political purposes rather than as means to inductive generalization. Visions and revelations are subjective behavior cases, arising out of crises, under the control of dominant ideas, which long served the same purpose among less introspective peoples. Some of these more analytical cases, like the tragedy of Job and the Greek tragedies, were so elaborated and extended as to cover and illustrate a whole social philosophy. It is not particularly important whether these cases were factual or fictional, as far as their utilization was concerned. The utilization of actual cases from history, although doubtless strongly colored by the preconceptions of the folk or sectarian mind, reached considerable dimensions as soon as fairly reliable historiography appeared. In this function myth preceded history. In fact, it is well known that mythical traditions have always been created to explain and justify practices when the origins of such practices were unknown or when the actual origins would no longer justify surviving practices to a more modern world and ethics.

The utilization of the social case method for the purpose of constructing sociological generalizations may be said to have begun with the initiation of descriptive studies of peoples. Perhaps to Herodotus belongs the honor of this initiation in a small way. The social case study of groups and factions is of much later origin, due to the fact

already indicated that one perceives the strikingly strange and is able to describe it objectively earlier than those phenomena of which he is a part. To understand and describe the latter requires a much more elaborate technique of analysis and a much more subtle power of verbalization. It is interesting also to note that ethnological and anthropological descriptive case studies of primitive peoples were made much earlier than psycho-sociological case studies of the students' own societies. The former go back very far in history and are very common, at least in imperfect form, from the time of the European expansion in the sixteenth and seventeenth centuries. Even the systematic ethnological case studies of the nineteenth century antedate equally well developed psycho-social case analyses of institutions, parties, and sects which are only now beginning to be studied in any systematic way.

The survey is another form of social case study aiming at sociological generalization. The attempts at control or definition of the environmental factors, and consequently of their accurate measurement, are much more marked in the survey than in the earlier ethnographic and psycho-sociological descriptive case studies. The modern case studies in these two latter fields have recently come to take on the character of surveys. This is particularly noticeable in the case of such studies as Rivers' *The Todas*, the recent studies of the Bureau of American Ethnology and of the numerous British ethnographical and anthropological studies in the East Indies. The survey as such has advanced greatly from the time of the Domesday Book or of John Stow's rather crude and external study of the city of London. The modern survey seeks either to analyze and measure in great detail some particular phase of the life of a community or to get at the fundamental activities of the whole community and of the subtle

as well as the more obvious factors back of the activities. In other words the survey becomes increasingly psychosocial at the same time that it improves in intricacy of analysis and accuracy of measurement.

The survey, like other methods of interpretation, began as a practical instrument of social control. In its later forms and development it has become an avowed instrument for theoretical generalization, however much its ultimate object may yet be that of control. The rural sociologists have made much use of the survey for theoretical purposes and, with the aid of the Purnell grants, will make much more. Another case technique, taken over from applied fields of social technology and psychiatry, and adapted to the study of personality, is the life history. These life history studies are adapted either to a cross-section analysis of the personality or to a study of the genesis of personality in relation to the environmental factors which condition the individual's behavior. The life history corresponds roughly to the returns from the statistician's questionnaire, except that the preparer of the life history may prepare both the questions and the answers, while in the latter case he answers questions presented to him. The life history and the social case offer some very distinct implications regarding method for the sociological generalizer. But space limitations render it impossible to go into matter in the present paper.

The case method of analysis has undoubtedly contributed much to the development of sociological generalization. We have seen how the case was at first drawn from myth or history and used as a support to a dogma or belief, and how later it came to be a description of contemporaneous data and to be used for purposes of positive inductive sociological generalization. Thus the utilization of cases was the first critical method of inductive sociolog-

ical generalization to be employed. Critical or rigorous statistics grew out of one form of case study, that of the general survey. The statistical method has thus developed as a supplement to the case method. The more complex forms of sociological generalization are not possible without the use of the statistical method. The supplementary character of the two methods may best be illustrated by saying that the case analysis best gives a concrete understanding of a specific situation, while statistics is a conceptualizing device to enable one to see several situations together and under the same common denominator.

V. The statistical method has two aspects, the informal and the formal. Informal statistical method involves the rough generalization which is made by approximation from facts, possibly poorly defined and attested, which are picked up in more or less random observation. In this way the man in the street makes up his philosophy of all types of events from the weather to the presidential election. He "guesses" at general tendencies from what he sees or thinks he sees. The sample he uses may not be representative and his method of drawing conclusions may be anything but rigorously exact. However, it was the only method of seeing many separate events together as a unitary or single process, that is, of getting perspective and unity into one's view of social life, before rigorous or mathematically exact statistical method was invented. In spite of the fact that it was the forerunner of mathematical statistical method and was universally used for many centuries and still is used for tentative generalizations, and by the masses almost exclusively in their thinking, it is not ordinarily regarded as a statistical method at all. But such it is, and the only distinction between informal and formal statistics is that the former is merely more or less accurate approximation, usually of a fairly simple

sort, while the latter is a process of complex calculation of general principles and processes, of averages and means, on an exact mathematical basis.

Informal statistical generalization is older than formal science, even than recorded culture. It is the unconscious inductive source of many of the ancient major premises which the early philosophers, such as Socrates and Aristotle, sought to test by means of a more or less rigorous logic. Often it was the source of inductive generalizations achieved through visions and revelations.² Another, but deductive, source of early major premises and qualitative generalizations was reasoning by analogy, by which method like values or qualities were, and still are, attributed to things with striking similarities. The analogical and the informal statistical methods contended for mastery in the minds of early thinkers, as today they contend in the mind of the man in the street. Nor are the survivals of these methods unknown among the sociological experts. Other early examples of quantitative generalizations formulated by the informal statistical method are to be found surviving in ancient literatures and folk traditions, in proverbs and popular wisdom, in weather lore and in the survivals of magic and superstition. Aristotle, who wrote the first formal treatise on society, made repeated use of this method, as well as of the more deductive method of analogy.

The philosophers of history also employed the informal statistical method along with the case method and analogical deductions. With the growth of historical perspective and the accumulation of historical data to the point where historical facts began to repeat themselves approximately, the informal statistical method could be used in construct-

² For the psychology of revelation as a method of generalization, see "The Objective Viewpoint in Sociology," *American Journal of Sociology*, Nov., 1919.

ing historical sequences, and thus it was largely employed. Many of the numerous theories of social evolution, of stages, and of progress were arrived at, at least in part, through the application of this method. But this method was always used primarily in generalizing contemporaneous data. It was particularly useful in the early national and regional surveys, where also the formal statistical method began to be used. The writings of such men as Machiavelli, Bodin, Montesquieu, Turgot, Herder, Rousseau, Saint-Simon, Godwin, Comte, and Buckle, abound in informal statistical generalization about various sorts of contemporaneous and historical items, as do the writings of present day publicists.

The development of formal statistics as a method of sociological generalization is primarily the product of the nineteenth century applications of quantitative measurements to social phenomena. It was made possible by the collection of vast quantities of data of the same class or order in fairly restricted fields, since it is not possible to apply the method except to collections of data which provide fairly easily an adequately representative sample. Thus formal statistics was first applied to population and financial and industrial data, to the generalization of accurate formulas and principles regarding death, birth and marriage frequencies, and has been extended increasingly to such subjects as circulation of money and credit, exchange volumes and rates, wholesale and retail prices, business cycles, price prediction, and the like. Although the formal statistical method is obviously much more accurate and dependable than the informal method, it is not possible to substitute the former for the latter in all cases, at least not immediately. The formal method works best with large masses of data, and especially must these data be comparable or of the same order. In many types of social

situ
rela
of t
tion
ded
ure
and
law

give
soci
valu
ren
vid
cas
for
are
cas
Th
sec
sing
ize
com
plic
is t
gar
suc
rela
tica
iter
org

str
ma

situations the approximate recurrence of phenomena under relatively the same conditions and within a limited period of time is so rare that even informal statistical generalizations are made with difficulty. In such cases analogical deduction continues to be used, or, in the event of the failure of this method, each case or item is regarded as unique and no attempt is made to construct general principles, laws, or formulas.

In such a situation the intensive study of the case will give much insight into the mechanisms of the event as a social phenomenon, but such case study has little or no value in prediction, because the case studied is non-recurrent. It may, however, aid in the adjustment of the individual while the event is in process. The relation of the case to the statistical generalization is either formal or informal. As said before, the case and statistical methods are supplementary, not antithetical. Statistics takes the cases and looks them into perspective or unity of process. This is true whether we take an evolutionary or a cross section view of society. A case may be described as a single item or fact which must be defined and standardized, or a complex of related items, even of the greatest complexity. The case is not defined in terms of its simplicity or complexity, but in terms of its organic unity. It is the business of case analysis to define this item or organized unity of items and to attach to it and its elements such values, numerical if possible, that they may be further related to a larger whole. It is the business of the statistical method to organize these items and collections of items, thus defined, labelled and evaluated, into a larger organic unity or "case."

Thus the statistical method may be a means to the construction of larger units of observed phenomena which may in turn serve for purposes of case analysis, just as the

case analysis may be the means to the definition and evaluation of data which are an essential preliminary to their being handled statistically. The essential function of case analysis is definition; that of statistics is integration, that is, to look into perspective and organic unity, in order that the "mind's eye" may see social phenomena as wholes rather than as isolated units. While supplementary, one important distinction between the case and statistical methods should be noted. A case description is, if accurate, always a true record of what occurs, while a statistical generalization, except in those instances when all included cases are identical, is only an abstract approximation. Definiteness and concreteness of detail must in some degree be sacrificed to the more inclusive view of the statistical generalization. If frequently "cases" or conceptual integrations of phenomena must be broken up into constituent items in order to look these items into new unities or perspectives, into new conceptual "cases," this fact does not create an essential antagonism between the two methods. Perhaps it merely emphasizes their interdependence. The real source of methodological error is in supposing that statistical generalization can proceed without definition of data or units or that generalization can proceed from case data without some sort of statistical method. So-called common sense inferences from cases amount to nothing less than informal statistical generalizations. Formal statistical generalizations are more adequate, when practicable.

VI. The cardinal difficulty with the statistical method—that of generalizing imperfectly comparable data—has recently been much emphasized in connection with its informal applications to anthropological data. This difficulty has been especially noticeable when the anthropological generalizers have attempted to break up the complex

ethn
con
into
from
to g
mar
eral
anti
was
the
the
mar
wou
he
rece
Wa
bro

ficu
stat
ant
the
of
to
tive
thr
tion
aba
the
iza
the

Cul
tion
cal

ethnological cases described by anthropologists into their constituent items and reassemble them out of their settings into informal statistical generalizations of similar items from a wide range of cases. The failure of this attempt to generalize items out of their case settings did not really mark a failure of the informal statistical method of generalization, when properly safe-guarded, although many anthropologists believed that such a failure of method was indicated and abandoned it, returning exclusively to the method of descriptive case study. Lowie has written the brief for this viewpoint in his *Primitive Society*. For many years no self-respecting American anthropologist would attempt to generalize outside of the particular case he was describing. But the phobia is now passing and recent volumes by Kroeber, Wissler, Goldenweiser, Tozzer, Wallis and others show clearly that there is a place for broader informal statistical generalizations.³

The difficulty with the older method was the same difficulty that is found to inhere in the application of the statistical method to any field of data, whether historical, anthropological, archeological or contemporaneous, when there is not a sufficiently large body of closely defined facts of the same order, that is, of facts sufficiently comparable to enable them to be looked into organic unity or perspective. But the difficulty in employing the method with anthropological data was not as great as it was in connection with historical data, where it has been almost totally abandoned for the present. The chief problem in making these two types of data available for sociological generalization consists in finding a better method of definition of the items or facts to be generalized. It is not enough to

³ The work of Hobhouse, Wheeler and Ginsberg entitled *The Material Culture and Social Institutions of the Simpler Peoples, An Essay in Correlation* (London, 1915), marks an attempt to apply informal and formal statistical methods to the interpretation of anthropological data.

label them by analogy, because they bear an external resemblance and therefore have imposed upon them a common name. It will be necessary to define these items in terms of their cultural environments, as well as in terms of their external similarities, before they can be generalized statistically. Only in this way can exceptions to conformity to type be indicated and preserved in the generalization. If it were possible to weight the items of the same general class or name with numerical values which would indicate the degrees of their variations from a norm (give them the same common denominator) it would then be possible to generalize them according to a rigorous formal statistical method.⁴ Perhaps this numerical evaluation of similar data will sometime be achieved in anthropology and history and thus render the use of formal statistics possible in the construction of sociological generalizations from these sources. For the present, however, the careful generalizers in these fields, especially in anthropology, are taking pains to qualify their informal statistical conclusions by noting the numerous exceptions. This is the only recourse where the informal statistical method ventures into borderline areas of inadequately comparable data. Its justification for entering such fields is that there is no other method of securing a broader view than that afforded by the single case, and it must be taken with its limitations or not at all.

The advantages of anthropological over historical data for purposes of statistical generalization have already been hinted at. Anthropological data are frequently simpler than historical data. They are also nearer at hand and are frequently capable of verification. They have usually been

⁴ This, of course, is just what is being achieved by the laboratory and clinical workers who are making intelligence, emotional, sociability, etc. tests and measurements and recording them as data for future sociological generalization.

observed with discrimination by experts. They are less likely to have become formalized and institutionalized into lifelessness through compression into documents and by running the gauntlet of countless censors. By the same token they are less subject to distortion. And they have been selected with more or less of a sociological eye to a definite purpose, and conditions and exceptions frequently noted. Ordinarily, also, they are much fuller and therefore more adequate. A whole volume or more may be devoted to a single people of small population inhabiting a highly circumscribed territory. Compare this fact with the statement of James Harvey Robinson in his *New History* to the effect that all of the verified data (as distinguished from inferences) of Roman history would occupy but a few pages.

But, on the other hand, the value of anthropological data for sociological generalization is much less than that of data from contemporary society. At the best they are far less numerous and are usually less well defined. They apply to a lower culture, probably very unlike our own. It is very difficult for even a trained anthropologist who has lived for years among a primitive people to detect all of the pertinent data or to evaluate and interpret them adequately. In many cases the natives, even when the will is good, are not able to give much aid, for they are even less prepared than the anthropologist to perceive the more subtle and less structuralized and visible phenomena of their group life. For example, they frequently do not know they possess such a thing as a grammar or institutions, until the anthropologist demonstrates these structures. For these and similar reasons the generalization of anthropological data, even when adequately accomplished, makes but a poor contribution to the sociological theory of civilized man. Although such data were used

predominantly in the last half of the nineteenth century, especially by men like Spencer, Letourneau, Wundt, Durkheim, Lipps, Lippert, Morgan, Westermarck, Lubbock and Tylor, the sociological theories resulting were in part saved from undue distortion by selecting the anthropological data to support largely preconceived sociological notions worked out by more or less unconscious formulation of contemporaneous data. To follow unreservedly the lead of anthropological data in making sociological generalization would probably result in a pure science of primitive sociology or social anthropology but little applicable to modern social conditions.

VII. The arguments of this paper may now be summarized as follows:

1. A conscious attempt at method in thinking was initiated by the sophists. In Socrates this took the form of the dialectic method, which aimed at "peeling off error" and leaving the kernel of truth in propositions by a process of comparison and elimination of ideas.

2. Aristotle formalized this process in the form of the syllogism. He also used various inductive methods, which have been more fully developed since, but he did not name these.

3. History was for a long time the major source of data for sociological generalization, because historical data were given artificial definition and fixity, while contemporaneous facts lacked fixity and definition and were correspondingly difficult to perceive because they must be seen without adequate perspective. Also their number and closeness made difficult adequate and discriminating selection. In the end historical data proved inadequate for the purpose of sociological generalization.

4. For various reasons mentioned, anthropological data, as a source of sociological generalization, largely re-

placed the use of historical data. The use of anthropological data was an approach toward the employment of contemporaneous data in the immediate field of the generalizer, with the methodological advantages of being simpler and more detached from the observer and generalizer.

5. These two initial advantages, and others, later became disadvantages in the formulation of a completer sociology adequate for an interpretation of modern societies. As a consequence, sociological generalization makes increasing use of contemporaneous data. The disadvantages of immediacy to the observer and complexity are being overcome by certain methodological devices and by intensive study and analysis.

6. With the increase of comparable data, especially in the field of contemporaneous social phenomena, the primitive method of case analysis comes increasingly to be supplemented by that of statistical generalization. Statistical generalization arises as a method of seeing many like things together, i. e., of increasing the range of the sociological vision. It is also a method of giving unlike or related items a common denominator and thus a common classification and perspective. But case analysis remains and is constantly improved as a method of getting at the meaning of events in a specifically defined situation. The two methods are supplementary.

7. The case method has gone through several stages of development from the parable, allegory, story, drama, novel, biography, etc.—which are primarily illustrative in function—down to the descriptive survey, analytical survey, and case history, which are used now largely as data for inductive and sociological generalization.

8. Statistical method has evolved from the informal to the formal. Recent abundance of data in various fields

of social phenomena has made possible an accurate mathematical handling of the process of sociological generalization to supplement intensive case analysis and definition of data.

9. The analogical method of interpretation and generalization of sociological conclusions, although deductive rather than inductive, has persisted in our time in default of a completer development of the statistical method. In fact, the initial statistical process of choosing the sample perhaps inevitably involves some analogical elements, although these may be removed by a fuller development of case analyses and of numerical definition of items to be generalized.

10. Analogical, case, and statistical methods are methods of analysis and comparison and generalization of data into sociological facts and principles or formulas. We may also speak of the historical, archeological, anthropological, and contemporaneous methods in the sense of methods of collecting facts as distinguished from methods of generalizing them. The application of statistics is so closely identified with the use of contemporaneous data that the collection as well as the generalization of these data is not infrequently termed statistical.

L. L. BERNARD.

TULANE UNIVERSITY.